TP 13198E

TRANSPORTATION IN CANADA 2000

ANNUAL REPORT

Transport Canada Transports Canada

Canada

© Minister of Public Works and Government Services, Canada, 2000

Cat. No. T1-10/2000E
ISBN 0-662-29917-5

Également disponible en français sous le titre «Les transports au Canada 2000»

101-05709/

Minister of Transport | Ministre des Transports

Ottawa, Canada K1A 0N5

2/5/01

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.
Governor General of Canada
Rideau Hall
1 Sussex Drive
Ottawa, Ontario
K1A 0A1

Excellency:

I am submitting to your attention the fifth Annual Report on the state of transportation in Canada. The report satisfies the statutory requirements defined in Section 52 of the *Canada Transportation Act*. The report clearly shows the very significant role played by transportation in the Canadian economy.

The 2000 Annual Report, as did the four preceding ones, contains a wealth of information on the state of the Canadian transportation system. The most recent information available is put forward in the Annual Report in a way that allows one to understand the sources of demand and pressures on the transportation system. It presents, among other things, an overview of the system's infrastructure, as well as current trends in Canada's transportation and trade, with special attention to energy use by the transportation sector.

The report precedes that of the *Canada Transportation Act* Review Panel. These two reports, as well as the first four Annual Reports, will be useful in defining a national transportation blueprint for the next decade and beyond.

A solid information base will help in understanding the trends and challenges that have faced transportation in recent years. Our country's GDP depends to a large extent on trade. Looking ahead, it is clear that Canada's prospects for growth and development are in the global marketplace. To support strong economic growth in the future, we must aim to make the country's transportation system the best in the world — safe, efficient, integrated, accessible and environmentally friendly.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.

TABLE OF CONTENTS

		Page
	Report Highlights	i
1.	**Introduction**	1
2.	**Transportation and the Canadian Economy**	3
	The Canadian Economy	3
	Contribution of Transportation to the Economy	6
3.	**Government Spending on Transportation**	9
	Government Transportation Expenditures	9
	Total Transportation Revenues by Level of Government	13
	Overview of Expenditures and Revenues by Mode	13
4.	**Transportation and Safety**	15
	Transportation Occurrences	15
	Transportation of Dangerous Goods	26
5.	**Transportation — Energy and Environment**	27
	Energy	27
	Transportation's Environmental Impact	32
6.	**Transportation and Regional Economies**	39
	A Socio-economic Profile of Provincial Economies	39
	The Value-Added of Commercial Transportation	41
	Domestic Transport Related Demand	42
7.	**Transportation and Employment**	45
	Workforce	45
	Average Salaries	55
	Labour Action in Transportation	58
8.	**Transportation and Trade**	59
	Domestic Trade	59
	International Trade	62
9.	**Transportation and Tourism**	71
	Tourism Expenditures	71
	Travel Overview	73
10.	**Transportation Infrastructure**	81
	Rail Transportation Infrastructure	81
	Road Transportation Infrastructure	84
	Marine Transportation Infrastructure	87
	Air Transportation Infrastructure	103

TABLE OF CONTENTS (Cont'd)

Page

11. Structure of the Transportation Industry 111
Rail Industry 111
Trucking Industry 112
Bus Industry 122
Marine Transportation Industry 124
Air Transportation Industry 132

12. Freight Transportation 139
Rail Transportation 139
Trucking Transportation 142
Marine Transportation 145
Air Transportation 151

13. Passenger Transportation 155
Rail Transportation 155
Bus Transportation 156
Automobile Transportation 159
Marine Transportation 159
Air Transportation 160

14. Price, Productivity and Financial Performance in the Transportation Sector 175
Rail Industry 176
Trucking Industry 179
Bus Industry 181
Air Transport Industry 183

LIST OF APPENDICES

Title *Page*

Transportation and the Canadian Economy

2-1: PERSONAL EXPENDITURES ON TRANSPORTATION, 1998 8

Transportation Infrastructure

10-1 AIRPORTS CAPITAL ASSISTANCE PROGRAM – PROJECTS APPROVED IN 2000 110

Passenger Transportation

13-1 AMENDED FRAMEWORK FOR CANADA'S INTERNATIONAL AIR POLICY AS AT DECEMBER 21, 1999 170
13-2 INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 2000 (EXCLUDING CANADA-US TRANSBORDER SERVICES) 171
13-3 SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000 172

LIST OF TABLES

	Title	Page
2.	**Transportation and the Canadian Economy**	
2-1:	GENERAL ECONOMIC INDICATORS	3
2-2:	PROVINCIAL ECONOMIC GROWTH	6
2-3:	COMMERCIAL TRANSPORTATION AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)	6
2-4:	TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)	7
3.	**Government Spending On Transportation**	
3-1:	GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION, 1996/97 TO 2000/01	9
3-2:	FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1996/97 TO 2000/01	10
3-3:	DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1996/97 TO 2000/01	11
3-4:	GOVERNMENT REVENUES FROM TRANSPORT USERS, 1996/97 TO 2000/01	13
3-5:	TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT	14
4.	**Transportation and Safety**	
4-1:	TRANSPORTATION OCCURRENCES BY MODE, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)	16
4-2:	ACCIDENT RATES IN TRANSPORTATION, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)	16
4-3:	ACCIDENTS IN RAIL TRANSPORTATION, 1995 – 2000	17
4-4:	RAILWAY CROSSING ACCIDENTS BY PROVINCE, 1995 – 2000	17
4-5:	RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 2000	17
4-6:	TOTAL ROAD CASUALTY COLLISIONS, FATALITIES AND INJURIES, 1994 – 1999	18
4-7:	ROAD FATALITIES BY CATEGORY OF ROAD USER, 1994 – 1999	18
4-8:	COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998	19
4-9:	VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998	19
4-10:	MARINE OCCURRENCES, 1995 – 2000	22
4-11:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1995 – 2000	24
4-12:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000	25
4-13:	FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000	25
4-14:	FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1995 – 1999	25
4-15:	REPORTABLE DANGEROUS GOODS ACCIDENTS BY MODE AND PHASE OF TRANSPORT, 1995 – 2000	26
4-16:	DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1995 – 2000	26
4-17:	TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1995 – 2000	26
6.	**Transportation and Regional Economies**	
6-1:	A SOCIO-ECONOMIC PROFILE OF CANADA'S PROVINCES, 1999	40
6-2:	RELATIVE IMPORTANCE OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999	42
6-3:	ANNUAL GROWTH OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999	42
6-4:	DOMESTIC TRANSPORT-RELATED DEMAND AS A PERCENTAGE OF PROVINCIAL FINAL DOMESTIC DEMAND, 1999	43
6-5:	ANNUAL GROWTH IN DOMESTIC TRANSPORT DEMAND, 1999	43
7.	**Transportation and Employment**	
7-1:	TRANSPORTATION EMPLOYMENT BY CATEGORY, 1996 – 2000	46
7-2:	EMPLOYMENT BY RAIL TRANSPORT SERVICES, 1995 – 1999	46
7-3:	EMPLOYMENT BY MEDIUM AND LARGE FOR-HIRE TRUCKING FIRMS, 1995 – 1999	47
7-4:	EMPLOYMENT IN THE TRUCKING INDUSTRY, BY REGION	47
7-5:	TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY, 1995 – 1999	48
7-6:	FULL-TIME EMPLOYEES IN THE BUS INDUSTRY, 1995 – 1999	48
7-7:	AVERAGE ANNUAL EMPLOYMENT IN THE MARINE TRANSPORT INDUSTRY, 1996 – 2000	49
7-8:	REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1995 - 1999	49
7-9:	EMPLOYMENT IN THE AIR INDUSTRY, 1995 – 1999	50
7-10:	OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT, 1996 – 2000	50
7-11:	EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES, 1995 – 1999	51
7-12:	EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 – 2000	51
7-13:	EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1996 – 2000	52
7-14:	EMPLOYMENT AT NAS AIRPORTS, 2000	52

	Title	Page
7-15:	PLANNED FULL-TIME EQUIVALENTS FEDERAL DEPARTMENTS AND AGENCIES	52
7-16:	MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1996 – 2000	53
7-17:	EMPLOYMENT BY TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS, 1996 – 2000	54
7-18:	AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR BY MODE AND PROVINCE, 1996 – 2000	55
7-19:	AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY, 1996 – 1999	56
7-20:	AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1996 – 2000	56
7-21:	AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY, 1995 – 1999	57
7-22:	ANNUAL LABOUR COSTS PER EMPLOYEE CANADIAN BASED MARINE CARRIERS, 1995 – 1999	57
7-23:	ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS, 1995 – 1999	57
7-24:	LABOUR ACTION BY MODE OF TRANSPORT, 1996 – 2000	58

8. Transportation and Trade

8-1:	DOMESTIC TRADE BY SECTOR, 1999	60
8-2:	DOMESTIC TRANSPORTATION FLOWS, 1999	60
8-3:	DOMESTIC TRANSPORTATION FLOWS, BY SECTOR AND MODE, 1999	61
8-4:	INTERPROVINCIAL TRADE, MAIN EAST-WEST ROUTES, 1999	62
8-5:	CANADA–US TRADE BY MODE AND SECTOR, 1993 – 1999	64
8-6:	CANADA–US TRADE BY PROVINCE, 1999	64
8-7:	CANADA–US TRADE BY US REGION, 1989 AND 1999	65
8-8:	CANADA–US TRANSBORDER TRADE SHOWING MAIN NORTH–SOUTH TRADE FLOWS, 1999	66
8-9:	EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED CURRENCY	67
8-10:	CANADA–NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1993 – 1999	68
8-11:	CANADA'S TRADE WITH NON-US COUNTRIES BY PROVINCE, 1999	68
8-12:	CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999	69
8-13:	CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999	69
8-14:	CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1999 AND 2000	70
8-15:	CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1999 AND 2000	70

9. Transportation and Tourism

9-1:	TOURIST SPENDING IN CANADA ON TRANSPORTATION AND OTHER MAJOR CATEGORIES, 1999	72
9-2:	CANADIAN TRAVEL SUMMARY, 1999 – 2000	73
9-3:	DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1999	74
9-4:	CANADA–US TRAVEL BY MODE, 2000	76
9-5:	CANADA–US AIR BUSINESS TRAVEL, BY PROVINCE, 1999	77
9-6:	CANADA–US AUTOMOBILE BUSINESS TRAVEL, BY PROVINCE: 1999	78
9-7:	PURPOSE OF TRIP FOR OVERSEAS TRAVEL, 1990 AND 1999	79

10. Transportation Infrastructure

10-1:	RAILWAYS IN CANADA, 2000	81
10-2:	CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 2000	82
10-3:	CN AND CPR RATIONALIZATION BY PROVINCE, 2000	83
10-4:	PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE	83
10-5:	LENGTH OF ROADS IN CANADA	85
10-6:	TRAFFIC LEVELS ON THE PRIMARY PROVINCIAL HIGHWAY NETWORK, 1996	85
10-7:	TWENTY LARGEST BORDER CROSSINGS FOR TRUCKS, 1998-2000	88
10-8:	CLASSIFICATION OF MAJOR PORTS	89
10-9:	PORTS NO LONGER UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA, 1996 – 2000	89
10-10:	NUMBER OF SITES UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA BY PROVINCE AND YEAR, 1995 – 2000	90
10-11:	DIVESTITURE STATUS OF TRANSPORT CANADA REGIONAL/LOCAL AND REMOTE PORTS	91
10-12:	CANADA PORT AUTHORITIES FINANCIAL PROFILES, 1999	91
10-13:	FINANCIAL RESULTS OF MAJOR PORTS, 1995 – 1999	92
10-14:	CANADA PORT AUTHORITIES FINANCIAL COMPARISON, 1998 AND 1999	92
10-15:	FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1995/96 – 1999/00	93
10-16:	TOTAL TONNAGE HANDLED IN CANADA'S PORT SYSTEM, 1998 – 1999	94
10-17:	FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, JANUARY 2001	95

	Title	Page
10-18:	RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 2000/2001	95
10-19:	RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, AS OF JANUARY 2001	95
10-20:	SMALL CRAFT HARBOURS RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 2001	95
10-21:	ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 1990 – 2000	97
10-22:	ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1993 – 2000	98
10-23:	ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000	98
10-24:	PILOTAGE AUTHORITY FINANCIAL RESULTS, 2000	99
10-25:	PILOTAGE AUTHORITY FINANCIAL RESULTS, 1996 – 2000	99
10-26:	TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1996 – 2000	100
10-27:	CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 2000	102
10-28:	CANADIAN COAST GUARD REVENUES AND EXPENDITURES, 1997/98 – 2000/01	102
10-29:	CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2000/01	103
10-30:	SUMMARY OF KEY CANADIAN AIR TRAFFIC CONTROL OPERATION STATISTICS, 1996 – 2000	103
10-31:	FINANCIAL SUMMARY FOR NAV CANADA, 1999 – 2000	104
10-32:	CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2000	105
10-33:	AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS	107
10-34:	AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1999	108
10-35:	AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 1999/2000	109

11. Structure of the Transportation Industry

11-1:	FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1997 – 1999	117
11-2:	TOP 50 FOR-HIRE CARRIERS BASED ON NUMBER OF VEHICLES, 2000	118
11-3:	DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1999	119
11-4:	CANADIAN COURIER COMPANIES, ESTIMATED VOLUME AND REVENUES, 1998	120
11-5:	NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIER, 1997	120
11-6:	ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1987 – 2000	122
11-7:	SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1999	122
11-8:	TOTAL REVENUES BY INDUSTRY SECTOR, 1995 – 1999	123
11-9:	CANADIAN REGISTERED FLEET BY TYPE, 1980 – 2000	126
11-10:	EAST COAST CANADIAN-FLAG CARGO FLEET — 1,000 GRT AND OVER, 2000	127
11-11:	SHIPPING CONFERENCES SERVING CANADA IN 2000	129
11-12:	GLOBAL AIRLINE ALLIANCES, 2000	134
11-13:	CAPACITY SHARES OF AIRLINES, DECEMBER 1999	134
11-14:	CAPACITY SHARES OF AIRLINES, DECEMBER 2000	134
11-15:	AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE	135
11-16:	CANADIAN AIR CARGO AIRLINES	135
11-17:	LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 2000	135
11-18:	AIR CANADA'S DOMESTIC CODE-SHARE PARTNERS AS OF DECEMBER 31, 2000	136
11-19:	LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF DECEMBER 31, 2000	136
11-20:	PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000	137
11-21:	SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 2000	137
11-22:	PERSONNEL LICENCES AND PERMITS BY PROVINCE AS OF DECEMBER 2000	137

12. Freight Transportation

12-1:	GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1998 AND 1999	140
12-2:	TRANSBORDER RAIL TRAFFIC BY PROVINCE, 1999	140
12-3:	FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1999	142
12-4:	INTERNATIONAL FOR-HIRE TRUCK TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1999	143
12-5:	FOR-HIRE TRUCKING TRAFFIC BY COMMODITY GROUP, 1999	143
12-6:	FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1999	143
12-7:	REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 2000	144
12-8:	SALE OF CLASS 8 TRUCKS BY PROVINCE, 1998 TO 2000	144
12-9:	REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 2000	145
12-10:	CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 – 1999	146
12-11:	CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1999	146

	Title	Page
12-12:	MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1999	146
12-13:	SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 1999	147
12-14:	VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1999	148
12-15:	CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 1999	148
12-16:	LINER TRAFFIC BY REGION, 1999	148
12-17:	CANADA'S MARITIME TRADE WITH THE US, 1986 – 1999	149
12-18:	CANADA'S MARINE TRAFFIC TO THE US, 1999	149
12-19:	CANADA'S MARINE TRAFFIC FROM THE US, 1999	149
12-20:	CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1999	150
12-21:	CANADA'S MARINE TRAFFIC TO OVERSEAS, 1999	150
12-22:	CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1999	151
12-23:	GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999	151
12-24:	OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999	152
12-25:	VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 – 1999	152
12-26:	TOTAL EXPORTS BY AIR TO COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF DESTINATION, 1999	153
12-27:	TOTAL IMPORTS BY AIR FROM COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF ORIGIN, 1999	153

13. Passenger Transportation

13-1:	PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1999	155
13-2:	COMMUTER RAIL PASSENGERS IN TORONTO, MONTREAL AND VANCOUVER, 1994 – 1999	155
13-3:	CANADIAN SCHEDULED CARRIERS AND MARKETS SERVED, 2000	156
13-4:	SUMMARY OF REVENUES FOR SCHEDULED INTERCITY OPERATORS, 1999	156
13-5:	URBAN TRANSIT FLEET COMPOSITION, 1991 – 1998	158
13-6:	CAR AND LIGHT TRUCK STATISTICS, BY PROVINCE/TERRITORY, 1999 AND 2000	159
13-7:	INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 2000	160
13-8:	COUNTRIES/TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 2000	162
13-9:	AIR CANADA DOMESTIC AIR SERVICE COMMITMENTS	163
13-10:	NEW DIRECT NON-STOP DOMESTIC SCHEDULED AIR SERVICES IN 2000	163
13-11:	COMPETITION IN DOMESTIC AIR MARKETS AS OF AUGUST, 2000	164
13-12:	NATIONAL AIRPORTS SYSTEM (NAS) NUMBER OF DOMESTIC MARKETS SERVED INCLUDING CHARTERS AS OF DECEMBER 2000	164
13-13:	DOMESTIC PASSENGER TRAFFIC, 1988 – 1999	165
13-14:	NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 2000	166
13-15:	CANADA–US AIR PASSENGERS: SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999	166
13-16:	NUMBER OF US AIRPORTS SERVED BY NAS AIRPORTS (SCHEDULED NON-STOP ONLY) AS OF DECEMBER 31, 2000	166
13-17:	CANADA – INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999	167
13-18:	NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORTS SYSTEM (SCHEDULED DIRECT ONLY) AS OF DECEMBER 31, 2000	168

14. Price, Productivity and Financial Performance in the Transportation Sector

14-1:	PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY	175
14-2:	SIMULATION OF THE EFFECT OF 2000 FUEL PRICE INCREASES	176
14-3:	THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS	178
14-4:	VIA RAIL'S FINANCIAL PERFORMANCE RESULTS, 1996 – 1999	179
14-5:	THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS	180
14-6:	SUMMARY OF FINANCIAL INDICATORS FOR ALL INTERCITY BUS INDUSTRIES	181
14-7:	SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS, 1994 – 1999	183
14-8:	FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES, 1999	183
14-9:	SUMMARY OF FINANCIAL RESULTS FOR THE AIR TRANSPORT INDUSTRY, 1994 – 2000	185
14-10:	PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1999	186
14-11:	PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1994 AND 1998	186
14-12:	COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991, 1994 AND 1998 – 1999	187
14-13:	EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1994 TO 1999	187
14-14:	SIMULATED 2000 FUEL PRICE ON TOTAL COSTS, TRANSPORT PRICES AND SUBSIDIES	188

List of Figures

Title *Page*

2. Transportation and the Canadian Economy

2-1: GOODS INDUSTRY CAPACITY UTILIZATION, 1986 - 2000 3
2-2: REAL GDP BY MAJOR SECTOR, 1996 – 2000 4
2-3: REAL GDP IN CANADA AND OTHER REGIONS, 1997 – 2000 4
2-4: MERCHANDISE TRADE, 1995 – 2000 4
2-5: REAL PERSONAL DISPOSABLE INCOME PER CAPITA, 1996 – 2000 5
2-6: INTERNATIONAL OVERNIGHT TRAVEL, 1990 – 2000 5

3. Government Spending On Transportation

3-1: PROVINCIAL/TERRITORIAL AND LOCAL TRANSPORT EXPENDITURES BY PROVINCE, 1995/96 TO 1999/2000 12

4. Transportation and Safety

4-1: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1995 – 2000 16
4-2: CROSSING AND TRESPASSER ACCIDENTS, 1995 – 2000 18
4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY PROVINCE, 1997 – 1999 19
4-4: PERCENTAGE OF ROAD COLLISIONS AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1998 19
4-5: RESULTS OF THE NATIONAL SEAT BELT SURVEY CONDUCTED IN JUNE OF EACH YEAR, 1988 – 2000 20
4-6: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG SELECTED OECD COUNTRIES, 1997 – 1999 20
4-7: SHIPPING ACCIDENTS, BY TYPE, 2000 21
4-8: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL FLAG AND VESSEL TYPE, 1995 – 2000 21
4-9: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999 VERSUS 2000 22
4-10: CANADIAN VERSUS FOREIGN FLAG COMMERCIAL VESSEL ACCIDENT RATE, 1995 – 2000 23
4-11: REPORTABLE INCIDENTS OF ALL AIRCRAFT, 2000 25

5. Transportation — Energy and Environment

5-1: ENERGY USE IN THE CANADIAN ECONOMY, 1999 27
5-2: GROWTH IN ENERGY USE BY SECTOR, 1990 – 1999 28
5-3: ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1999 28
5-4: GROWTH IN ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1990 – 1999 28
5-5: ENERGY USE IN THE TRANSPORTATION SECTOR BY SOURCE, 1999 28
5-6: TRANSPORTATION ENERGY PURCHASES BY REGION IN PETAJOULES, 1999 29
5-7: RETAIL PRICES OF ROAD FUELS VERSUS CRUDE OIL 29
5-8: ANNUAL PRICE OF ROAD GASOLINE AND DIESEL, 1991 – 2000 30
5-9: PRICE OF RAIL DIESEL AND JET FUEL, 1991 – 1999 30
5-10: RETAIL PRICE OF MOTOR GASOLINE BY CITY 31
5-11: ANNUAL PRICE OF MOTOR GASOLINE (REGULAR UNLEADED), NOMINAL VERSUS REAL PRICE 31
5-12: INTERNATIONAL PRICE OF MOTOR GASOLINE FOR 2000 31
5-13: TRANSPORTATION GREENHOUSE GASES, 1998 32

7. Transportation and Employment

7-1: DISTRIBUTION OF RAIL EMPLOYMENT BY CATEGORY, 1999 47
7-2: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1999 50
7-3: MARINE PILOTAGE EMPLOYMENT DISTRIBUTION, 2000 54
7-4: TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS EMPLOYMENT DISTRIBUTION, 2000 54
7-5: EMPLOYMENT BY NAV CANADA, 2000 54
7-6: AVERAGE WEEKLY EARNINGS, BY MODE, 2000 55
7-7: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1996 - 2000 58

8. Transportation and Trade

8-1: DOMESTIC TRADE BY TYPE, 1993 – 1999 59
8-2: DOMESTIC TRADE BY SECTOR, 1993 – 1999 60
8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1993 AND 1999 61
8-4: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1999 62
8-5: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, OTHER REGIONS AS ORIGIN, 1999 62
8-6: TRENDS — INTERPROVINCIAL TRADE VERSUS EXPORTS AND IMPORTS, 1993 – 1999 63

	Title	Page
8-7:	INTERNATIONAL TRADE BY TYPE, 1993 – 1999	63
8-8:	US IMPORTANCE IN CANADA'S EXPORTS, 1981 – 1999	63
8-9:	CANADA–US TRADE, MAIN ONTARIO TRADE FLOWS, 1999	66
8-10:	CANADA–US TRADE, MAIN CANADIAN REGIONS TRADE FLOWS, 1999	66
8-11:	EXPORTS TO NON-US COUNTRIES, 1993 – 1999	67
8-12:	IMPORTS FROM NON-US COUNTRIES, 1993 – 1999	67
8-13:	EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1999	69
8-14:	IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1999	69

9. Transportation and Tourism

9-1:	TOURISM SPENDING IN CANADA, 1986 – 2000	71
9-2:	EXPENDITURES BY OVERNIGHT NON-RESIDENT VISITORS BY PROVINCE, 1999	72
9-3:	CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 2000	73
9-4:	DOMESTIC TRAVEL BY PROVINCE, 1999	74
9-5:	INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 2000	75
9-6:	SAME-DAY CANADA–US AUTOMOBILE EXCURSIONS, 1996 – 2000	75
9-7:	OVERNIGHT CANADA–US EXCURSIONS, 1996 – 2000	75
9-8:	DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1998 – 1999	75
9-9:	CANADA–US AIR BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999	77
9-10:	CANADA–US AUTOMOBILE BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999	77
9-11:	VISITORS TO CANADA FROM ASIA, 1990 – 2000	78
9-12:	VISITORS TO CANADA FROM MAJOR EUROPEAN COUNTRIES, 1990 – 2000	78
9-13:	VISITORS TO CANADA FROM COUNTRIES OTHER THAN THE UNITED STATES, 1998 – 2000	78
9-14:	CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1997 – 1999	79

10. Transportation Infrastructure

10-1:	CANADIAN RAIL NETWORK RESTRUCTURING, 1990 – 2000	81
10-2:	CHANGES IN CANADA'S RAIL NETWORK, 2000	82
10-3:	ANNUAL TWO-WAY VEHICLE COUNTS BETWEEN CANADA AND THE UNITED STATES, 1986-2000	87
10-4:	CANADA PORT AUTHORITY PORTS	90
10-5:	TRAFFIC SHARES BY PORT GROUPS, 1999	94
10-6:	GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM	96
10-7:	PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 2000	100
10-8:	AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1996 – 1999	103
10-9:	NAV CANADA FEE SHARES, 2000	104
10-10:	MAP OF AIRPORTS DIVESTITURE, 2000 — NATIONAL AIRPORTS SYSTEM	105
10-11:	MAP OF AIRPORTS DIVESTITURE, 2000 — REGIONAL/LOCAL AIRPORTS	106
10-12:	MAP OF AIRPORTS DIVESTITURE, 2000 — SMALL AND ARCTIC AIRPORTS	106

11. Structure of the Transportation Industry

11-1:	SHORTLINE INDUSTRY GROWTH, 1990 – 2000	111
11-2:	TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1999	112
11-3:	NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF $1 MILLION OR MORE, 1990 – 1999	119
11-4:	NUMBER OF BANKRUPTCIES, TRUCKING VERSUS TOTAL ECONOMY, 1989 – 2000	122
11-5:	CANADIAN REGISTERED FLEET, 1980 – 1999	125
11-6:	PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000	136

12. Freight Transportation

12-1:	TOTAL MONTHLY LOADINGS BY RAIL, 1998 – 2000	141
12-2:	MONTHLY GRAIN LOADINGS BY RAIL, 1998 – 2000	141
12-3:	TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1989 – 1999	142
12-4:	ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2000	145
12-5:	SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1999	147

Title *Page*

13. Passenger Transportation

13-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1999 156
13-2: SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 – 1999 157
13-3: CHARTER BUS FLEET SIZE, 1981 – 1999 157
13-4: CHARTER BUS FLEET UTILIZATION, 1981 – 1999 157
13-5: CHARTER CARRIER'S BUS-KILOMETRES, 1981 – 1999 157
13-6: URBAN TRANSIT FLEET SIZE, 1981 – 1999 158
13-7: LONG-TERM TRENDS IN URBAN TRANSIT, 1981 – 1999 158
13-8: DOMESTIC MARKET SHARE AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, DECEMBER 2000 165
13-9: DOMESTIC PASSENGER TRAFFIC BY REGION, 1999 166
13-10: AIR PASSENGERS BY SECTOR, 1987 – 2000 168
13-11: ENPLANED/DEPLANED PASSENGERS AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS BY SECTOR, 2000 168

14. Price, Productivity and Financial Performance in the Transportation Sector

14-1: RAIL FREIGHT PRICE INDICES BY SECTOR, 1994 – 1999 177
14-2: PRODUCTIVITY TRENDS IN THE AIR TRANSPORT INDUSTRY, 1994 – 1999 184

REPORT HIGHLIGHTS

TRANSPORTATION AND THE CANADIAN ECONOMY

- The year 2000 was the ninth consecutive year of uninterrupted growth for the Canadian economy. This sustained growth brought the non-farm goods sector close to production capacity. In some instances, the supply of skilled workers became a constraint. By year end, the first signs of an easing in economic growth began to appear, a reflection of a slowdown of the US economy.
- One of the key sources of increased demand in the Canadian economy in 2000 came from business investment spending.
- Both the manufacturing and primary goods sectors, especially mineral fuel production, experienced a significant increase in the level of activity in 2000. While construction activity, mostly residential construction, grew significantly, retail trade also had a good year. Consequently, transportation activity had its fourth consecutive year of solid growth.
- Growth in merchandise exports surpassed that of imports. The rise in total merchandise exports, as well as the significant increase in imports, came from energy products, and machinery and equipment. In the case of energy products, given that the value of activity is the unit of measurement, the increases in exports and imports of energy products reflected the increase in the price of crude petroleum in 2000, as well as the strength of the US and Canadian economies.
- Real per capita disposable income rose as a result of the strong Canadian economy and tax reductions.
- In 2000, the strong economic growth was spread across all regions of Canada.
- The transportation industries' share of gross domestic product (GDP) was 4.1 per cent in 2000, with trucking having the largest share at 1.7 per cent, and domestic marine transport services the lowest at 0.3 per cent.
- Transportation demand, however, accounted for 13.3 per cent of GDP, the bulk of which came from expenditures on transportation equipment.

GOVERNMENT SPENDING ON TRANSPORTATION

- In gross terms, total government transportation expenditures in 1999/2000 increased from the previous fiscal year. Federal expenditures on transportation, however, decreased, while provincial/territorial and local governments' expenditures increased. In fact, since 1996/97, non-federal government transportation expenditures have been increasing by an average of 5.5 per cent annually.
- Annual gross government expenditures on transportation have ranged from $17 to $18 billion over the past five fiscal years.
- In net terms, government expenditures on transportation in 1999/2000 were approximately $4.7 billion, but in the mid-1990s they were around $7 billion.
- Between 1996/97 and 1999/2000, annual federal transport expenses fell from $2.2 billion to 1.4 billion. The largest federal government transport expenses are related to the Canadian Coast Guard.
- In 2000/01, total federal subsidies, grants and contributions to transportation are expected to be slightly under $600 million, half of what they were in the mid-1990s.

- Spending on roads and highways remains the most important category of transport-related expenditures by all provinces. Total government spending on roads reached $12.5 billion in 1999/2000, or 69 per cent of overall government spending on transportation.
- In some provinces and territories, spending on other modes of transportation was also significant. The Northwest Territories' expenditures on air transport are a case in point. In 1999/2000, the share of total gross government transportation expenditures devoted to air, marine and rail were 2.3, 11 and 1.3 per cent, respectively.
- Spending on transit systems accounted for 12 per cent of all government expenditures on transportation in 1999/2000. The bulk of spending on urban transit transport services has shifted from provincial to local governments. In 1999/2000, Ontario accounted for 47 per cent of governmental transit expenditures. Quebec, Alberta and British Columbia also had significant transit expenditures.
- In 1999/2000, federal revenues from transportation totalled $5.2 billion, of which $4.8 billion came from fuel tax revenues. Provinces and territories generated revenues of $9.2 billion during the same fiscal year, with $7 billion coming from fuel tax levies.

TRANSPORTATION AND SAFETY

- While there was a decline in the number of accidents in the aviation, marine and rail transport modes in 2000, the number of road casualty collisions was up slightly from the record low the previous year. Accidents involving dangerous goods also increased. The number of reported fatalities in air and rail transportation was down, while marine and road transportation showed a increase.
- The number of rail accidents reported in 2000 (1,062) was down from 1999. Non-main-track accidents accounted for 47 per cent of rail-related accidents, followed by crossing accidents, with a 25 per cent share, main-track train derailments and collisions with 12 per cent, and trespasser accidents with seven per cent. Dangerous goods were involved in 23 per cent of total rail accidents reported. In 2000, there were 87 rail fatalities, a figure 21 per cent less than the five-year average.
- In 1999, the most recent year for which information is available, there were 2,969 fatalities from motor vehicle accidents, a figure higher than the one reported in 1998, but below the five-year average. Roughly 18.7 per cent of all road fatalities involved collisions with commercial vehicles.
- The downward trend in the number of shipping accidents since 1990 continued in 2000, with fewer Canadian and foreign-flag vessels involved in accidents. The 21 fatal marine accidents in 2000 also represented a slight decline from the five-year average.
- A total of 321 accidents involving Canadian-registered aircraft occurred in 2000, the lowest number in the past 25 years. A slight decrease in the number of air fatalities, compared with 1999, was also reported.
- Two deaths and 42 injuries were caused by dangerous goods in 2000, with most of the accidents behind these statistics occurring at the handling stage rather than during transportation.

TRANSPORTATION — ENERGY AND ENVIRONMENT

ENERGY

- Transportation remains the single largest energy user in Canada, with 35 per cent of total domestic energy use in 1999. Between 1990 and 1999, transportation energy consumption increased by 26 per cent, a figure in line with the 24 per cent rise in real GDP over that period.
- Within the transportation sector, road transportation accounted for 72 per cent of total transportation energy consumption, followed by pipelines with 11 per cent, aviation with nine per cent, marine with five per cent, and rail with three per cent.
- Most of the transportation energy purchases in 1999 came from Ontario (34 per cent), Quebec (19 per cent), British Columbia (15 per cent) and Alberta (14.6 per cent).
- The price of crude oil in Canada more than tripled between February 1999 and November 2000. The retail price of motor gasoline, however, increased by only 51 per cent over the same period, while the price of diesel increased by 40 per cent.

ENVIRONMENT

- On the environment front, Canada's greenhouse gas (GHG) emissions from transportation energy consumption were equivalent to 157 megatonnes of CO_2, almost 35 per cent of total greenhouse gas emissions from total secondary energy use. Road transportation accounted for more than 77 per cent of transportation GHG emissions.

- With the increases in transportation energy demand in Canada, there are three major environmental issues to address: climate change, air quality and sustainability in the transportation sector.
- In 2000, Canada's Ministers of Energy and Environment released the first national business plan for the period 2001–2003, which outlines actions that they will take in all sectors of the economy to respond to climate change. The five transportation-related components of the federal contribution to this action plan have to do with fuel efficiency, new fuels, fuel-cell vehicles, freight transportation and urban transportation.
- At the end of 2000, Canada and the United States brought into force their agreement to reduce smog-causing pollutants.
- The Committee on Aviation Environmental Protection of the International Civil Aviation Organization developed a series of recommendations to reduce the environmental impact of aircraft noise and engine exhaust emissions.

TRANSPORTATION AND REGIONAL ECONOMIES

- Not surprisingly, in Newfoundland and Prince Edward Island marine transportation has the largest share of provincial gross domestic product (PGDP) of all provinces. Newfoundland also has the highest share of the air mode of all provinces.
- Truck transport is the most important mode in Nova Scotia and New Brunswick, with New Brunswick having the largest trucking PGDP share of all provinces.
- Trucking and public transit are the most important modes in Ontario's and Quebec's PGDP.
- Rail transport has a higher importance in western provinces' PGDP, due largely to the relative importance of primary industries in the region. Saskatchewan has the highest rail PGDP share of all provinces. Trucking has the highest PGDP share in Manitoba, Alberta and British Columbia, followed by rail in Manitoba and Alberta, and marine in British Columbia.
- In the territories, air is the most important mode, with a higher share of PGDP than in any of the provinces.
- Commercial transport growth exceeded PGDP growth in Ontario, New Brunswick and all western provinces.
- In 1999, New Brunswick had the highest level of domestic demand for transportation, followed by Ontario and Quebec.
- The annual growth in domestic transportation demand in 1999 exceeded the growth in provincial final domestic demand in Newfoundland, Prince Edward Island, Quebec, Ontario and British Columbia.

TRANSPORTATION AND EMPLOYMENT

- In 2000, transportation employment, with close to 853,600 jobs, increased by 2.2 per cent over the previous year.
- Trucking, the transportation sector's major employer, accounted for 37 per cent of transportation employment, followed by air transportation.
- In transportation service operations, employment in rail transportation declined by fewer than 2,000 employees between 1998 and 1999. In trucking, medium and large for-hire trucking firms employed more people in 1999 than in 1998. In the bus industry, a two per cent increase in the number of full-time employees was reported in 1999. The number of people working in the marine transport industry reached over 30,000 in 2000, its highest level in the last five years. For the air transportation industry as a whole, the increase in employment between 1998 and 1999 was marginal. Level I–III air carriers had an increase in employment, while Level IV carriers had a decline.
- With respect to transportation infrastructure, rail and port-related employment declined, while airport-related employment increased.
- Transportation-related employment associated with federal and provincial government services declined.
- In 2000, average weekly earnings increased for all modes of transportation. Trucking and urban transit had the largest increases.
- The transport sector in 2000 recorded its highest number of work stoppages since 1996. However, the workers involved were minimal compared to the numbers involved in work stoppages during 1999.

TRANSPORTATION AND TRADE

- In 1999, domestic trade of both services and goods increased. The split between intraprovincial and interprovincial trade remained the same at 85 per cent and 15 per cent, respectively.
- Between 1993 and 1999, the volume of goods generated by domestic trade increased from 372 million tonnes to 456 million tonnes. The greatest share,

between 46 and 50 per cent, moved by rail, followed by trucking, which increased its share from 38 to 43 per cent over this period. The marine share decreased and air carried less than one per cent of the total goods' traffic.

- In 1999, containerized freight represented approximately seven per cent of rail tonnage and almost one per cent of domestic marine tonnage.
- The increased level of trucking activity was due to an increase in manufacturing shipments.
- In 1999, exports and imports of both goods and services amounted to $391 billion and $362 billion, respectively, compared with $189 billion for total interprovincial trade.
- Of total Canadian exports in 2000, 87 per cent went to the United States. Trucking accounted for 60 per cent of exports to the United States and 80 per cent of imports from the United States. On a tonnage basis, pipelines ranked first, followed by trucking, rail and marine. Ontario accounted for nearly two thirds of Canada's trade with the United States.
- One third of Canada's total imports came from countries other than the United States, with the marine mode responsible for 70 per cent of such trade activities. The air mode, however, continued to increase its share of non-US imports to Canada.

TRANSPORTATION AND TOURISM

- In 1999, tourism spending in Canada totalled $50.1 billion, a 6.5 per cent increase over the previous year. Of this amount, $20.1 billion was spent on transportation, with air accounting for $11.6 billion. The increase in the price of fuel in 2000 translated into an increase of transportation spending related to tourism.
- Of total tourism expenditures in Canada in 1999, Canadians spent 69 per cent. Foreign visitors' spending in Canada rose by 7.7 per cent. Ontario had the lowest percentage increase in non-resident tourism spending.
- The number of domestic travel trips taken by Canadians increased by just under one per cent in 1999. On a per capita basis, each Canadian took 4.8 trips throughout the year. Thirty nine per cent of Canadians' total trips were for pleasure. The automobile was used for close to 92 per cent of all trips.
- The number of travellers crossing Canada's borders in 2000 rose by 0.3 per cent. Overall travel between Canada and the United States increased by about 0.4 per cent in 2000, with US travel to Canada falling and Canadian travel to the United States rising. The number of Canadians making overnight business trips to the United States continued to increase. The automobile was used for most Canada–US travel in 2000.
- A total of 4.6 million visitors from overseas countries came to Canada in 2000, a 4.9 per cent increase from 1999. The increase in visits by Asians to Canada, at 6.8 per cent, was significant, but visitors from Australia, New Zealand, and the United Kingdom also increased substantially.
- The number of Canadians travelling overseas increased 6.2 per cent in 2000.

TRANSPORTATION INFRASTRUCTURE

- In 2000, changes in Canada's rail network were minimal, with the total number of route-kilometres reduced by 0.1 per cent. Of the 1,100 kilometres of lines rationalized in 2000, 77 per cent were transferred. About 70 per cent of line discontinuances occurred in Alberta, while 63 per cent of the transfers to other operators were observed in Saskatchewan.
- Canada's road network is over 1.4 million kilometres, of which 1.2 million kilometres fall under the local roads classification. The remaining 200,000 kilometres is made up of primary and secondary highways under provincial/territorial jurisdiction and major urban arterial and collector roads under municipal/local control.
- Over 140 billion vehicle-kilometres were driven on the primary highway network for an annual average of 4,700 vehicles per day. Annual car traffic between Canada and the United States has stabilized at 77 million crossings, while truck traffic has grown at an average rate of over seven per cent per year since 1991 to reach the current 13.6 million crossings per year. Twenty Canada–US border crossing sites accounted for 73 per cent of total vehicle movements.
- At the end of 2000, 382 of the 549 public ports and public port facilities under Transport Canada's control and administration had been transferred, deproclaimed or demolished.
- Traffic on the two sections of the St. Lawrence Seaway was down in 2000 by over one million tonnes from 1999, reflecting a decrease in traffic of iron ore, coal and other bulk commodities.
- Three of Canada's four pilotage authorities faced financial deficits at the end of 2000.
- The net expenditures of the Canadian Coast Guard increased slightly in 1999/2000 from the previous fiscal year.

- Aircraft arrivals and departures at Canadian airports during the first eight months of 2000 totalled 4.9 million, close to a five per cent drop below the same period in 1999.
- The eight per cent reduction in NAV Canada's user fees introduced in 1999 was maintained in 2000.
- New airport authorities took over the operation of the Halifax International and Jean Lesage International (Quebec City) airports. Financial results of 16 airport authorities for 1999 showed that on average they generated $14.81 in revenues per passenger and incurred $11.35 in expenses per passenger. In 2000, 39 airports had projects approved for funding under the Airports Capital Assistance Program.

INDUSTRY STRUCTURE

- Changes to the structure of the Canadian rail industry in 2000 were modest. While several new shortlines were created, there were only marginal changes to the ownership structure of the shortline sector.
- Canadian motor carriers TCT Logistics, Kleysen Transport, Kayway Logistics, TransForce Inc., Clarke Inc. and Trimac were among the trucking firms involved in mergers and acquisitions in 2000. The latter two firms were also active in the Canada–US marketplace.
- The number of bankruptcies in the trucking industry increased in 2000 for a second consecutive year, bringing the total very close to its highest 1990s level.
- In 2000, FirstGroup PLC of the United Kingdom acquired Hertz, a group of companies primarily involved in school bus sales and services in Saskatchewan and the Northwest Territories. Laidlaw, a major school bus operator and the largest scheduled bus service operator in North America, faced financial difficulties in 2000.
- The concentration in ownership trend in liner shipping continued in 2000, with the top 20 companies controlling 76 per cent of the world fleet. CP Ships acquired TMM's shares in Americana Ships, as well as the Christensen Canadian African Line.
- In the domestic marine industry, Algoma Central Corporation and Upper Lakes Group pooled their fleet in 2000 into a single new entity, Seaway Marine Transport. CSL Group purchased the Upper Lakes group stake in Marbulk Canada. Rotterdam-based Smit International acquired Rivtow Marine Ltd., an important tugboat company in British Columbia.
- During the first half of 2000, Air Canada completed its acquisition of Canadian Airlines Corporation. In response to this restructuring of the airline industry, the federal government introduced Bill C-26. Bill C-26 addressed the government's plan to protect the public interest, increase consumer protection and ensure competition in air service.

FREIGHT TRANSPORTATION

- The combined Canadian rail operations of CN and CPR generated an increase in total revenue tonne-kilometres in 1999, totalling 271 billion. The output of their North American systems also increased in 2000, reaching 379 billion tonne-kilometres. Exports were a major source of this rail traffic growth.
- Between 1989 and 1999, Canadian for-hire trucking firms saw their international traffic increase at an average annual rate of 12.4 per cent, compared with a 4.2 per cent increase in their domestic traffic. In 1999, international traffic represented 76 billion tonne-kilometres, compared with 82 billion tonne-kilometres for domestic traffic.
- In 2000, over 270,000 Class 8 trucks (gross weight of 15,000 kilograms or more) were registered in Canada, three per cent more than in 1999. There were also over 390,000 registered trucks with gross weights between 4,500 and 15,000 kilograms.
- Marine handled freight traffic totalled 334 million tonnes in 1999, 1.9 per cent more than in 1998. Of this total, 105.8 million tonnes came from domestic flows, 101.9 million tonnes from Canada–US traffic and 179.2 million tonnes from overseas flows. Canada–US traffic flows increased by 1.8 per cent from 1998, while the overseas flows decreased by 0.1 per cent.
- The change in the total tonnes of air cargo carried by Canadian air carriers between 1998 and 1999 was not significant. In 1999, they carried a total of 826,000 tonnes. Of this total, 501,000 tonnes came from domestic flows, 91,000 from Canada–US flows and the remaining 234,000 tonnes from other international flows.

PASSENGER TRANSPORTATION

- Rail passenger traffic increased in 1999 by three per cent to over 4.1 million. VIA Rail accounted for 92 per cent of this traffic, with four Class II rail carriers carrying the rest. In terms of passenger-kilometres, traffic increased by about nine per cent to 1.59 billion. All carriers contributed to this growth. In Vancouver, Toronto and Montreal, passenger traffic on commuter rail lines increased by 44 per cent between 1994 and 1999.

- The number of passengers using scheduled intercity bus services declined in 1999 by almost one million passengers. While there is no passenger traffic data available for charter bus services, the bus-kilometres figures are indicative of an increase in patronage in the 1990s, with the 1999 figure being equivalent to that of the preceding year. Urban transit ridership showed an increase of 2.2 per cent in 1998 and one of 1.5 per cent in 1999.
- In 2000, 16.8 million cars and light trucks were registered, a slight increase over 1999. The distribution of the cars and light trucks more or less follows the distribution of Canada's population.
- In marine transportation, international cruise ship traffic increased at each of the five major ports in 2000. Vancouver passed the one million threshold for the number of cruise passengers handled annually, while the Port of Halifax also reached new heights at over 138,000 passengers. Cruise traffic was also up at Montreal and Quebec City but the largest increase was at Saint John, with a traffic level of over 100,000 passengers. This traffic could have been even higher had it not been for the bankruptcy of Premier Cruise Lines of Florida in September 2000.
- British Columbia Ferry Corporation carried 21.4 million passengers and 7.9 million vehicles in 1999/2000. Marine Atlantic Inc. increased its traffic, handling 478,000 passengers, 150,000 passenger vehicles and 77,000 commercial vehicles.
- The number of international air passengers increased by four per cent in 1999, with the growth coming from the Atlantic and southern markets. Preliminary statistics for 2000 showed a seven per cent increase in international passenger traffic. In domestic air services, the increase in passenger traffic in 1999 was about 2.8 per cent. In transborder air services, there was an increase of 4.8 per cent in the total number of passengers carried.

PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

- Between 1998 and 1999, the productivity increase in the transportation industry was about 2.4 per cent, compared with 1.7 per cent for the economy.
- Shippers received a portion of the benefits of the productivity gains achieved in different transportation sectors. Between 1994 and 1999, there were real term price declines of 0.8 per cent per year in rail freight transportation, 0.3 per cent annually in trucking.
- With respect to passenger transportation services, from 1994 to 1999 VIA Rail's long-haul service output grew by 3.1 per cent per year, while prices increased by 4.3 per cent per year; on its corridor services, prices increased on average by 2.5 per cent per year while demand grew by 0.7 per cent per year. In the bus industry, output increased by 2.6 per cent per year, and prices declined by 0.4 per cent per year. In air transportation, output of domestic air services grew at the annual rate of 6.3 per cent, while for international services, the annual rate of growth was 10.4 per cent. With respect to prices, in domestic services, they grew on average by 0.5 per cent per year between 1994 and 1999, compared with 1.8 per cent for international services.
- Between 1994 and 1999, rail freight total factor productivity increased by 3.9 per cent per year on average. In trucking, an average annual two per cent productivity gain was achieved over the same period. In VIA Rail's operations, a 5.1 per cent annual productivity improvement was achieved over this period, compared with 3.6 per cent in the bus industry and 3.8 per cent in the air transportation industry.
- In 1999, increased profits were reported by Class I rail freight carriers. VIA Rail improved its revenue/cost recovery ratio in 1999, achieving a 56.7 per cent ratio. Transit systems also improved their cost recovery ratio in 1999. A slight deterioration in operating ratios was observed in both the trucking and intercity bus industries in 1999. The improvement in the air transportation industry's financial performance in 1999 was insufficient to restore viability.
- A simulation of the effects of the increase in fuel prices in 2000 showed that transport fuel costs would have increased by 30 per cent, consequently raising total costs by 3.5 per cent. Assuming that such cost increases were all passed on to users, transport price increases of approximately 3.9 per cent would have been needed to offset the fuel cost increases. By mode, the impact of fuel price increases on prices would have been 3.2 per cent for rail freight services, four per cent for VIA Rail services, 3.3 per cent for trucking, 2.3 per cent for intercity bus services, 2.2 per cent for transit services, and 5.7 per cent for air services.

INTRODUCTION 1

The 2000 annual report presents the state of transportation in Canada using the most current information available.

When the *Canada Transportation Act* was passed in 1996, the Minister of Transport assumed the statutory responsibility to table an annual report on the state of transportation in Canada. The mandate for the report is spelled out in Section 52 of the Act:

"Each year the Minister shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

(a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;

(b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expenses;

(c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and

(d) any other transportation matters the Minister considers appropriate."

In this fifth report submitted by the Minister, readers will find an overview of transportation in Canada, based on the most current data and information available. With a broad scope unconstrained by jurisdictional considerations, this overview of transportation in Canada is comprehensive. There is, however, one exception: pipeline transportation activities — important for the transportation of oil, petroleum and gas products — remain outside the report's scope.

Data availability has always been a key limiting factor with this annual report. Ideally, it should cover the year 2000 throughout, but this absolutely up-to-date reporting occurs only where the necessary data were available. The report does, however, consistently review the most current year possible. In addition, the report examines trends in the transportation sector. Because of this coverage, previous reports may prove important to those interested in information over the long term.

Even with its data limitations, the report highlights Canada's major transportation "events" in 2000. Throughout the year, energy price increases were important. Accordingly, the report pays special attention to this issue, addressing the subject in many chapters from different perspectives. For instance, the chapter on the economy looks at the impact of energy price increases on major macro-economic indicators, while the chapter on energy and environment discusses energy prices themselves. The chapter on price, productivity and financial performance examines the potential impact of energy price increases on cost structure and price changes in each mode.

The content of this report, as in the last two reports, is not mode-specific, which allows for a horizontal view of transportation. The world is changing, and the demands that transportation users are placing on the system are changing as market conditions change. This horizontal approach makes it easier to identify similarities and differences in changes taking place across modes of transportation and to see when changes are unique to a mode.

The chapters in this report follow a logical sequence. The first chapter examines the Canadian economy and illustrates the state of transportation in Canada and the forces at play in 2000. The chapter on government transportation spending and revenues follows, showing the net fiscal budgetary attention devoted by governments to the sector. In addition, this chapter addresses a specific aspect of the Annual Report mandate. It is important to keep in mind, however, that government spending provides only a partial picture of the level of expenditures and investment in transportation operations and infrastructure.

Chapters on key subjects, including safety, energy and environment, regional economies, employment, trade, and tourism come next. The safety chapter is particularly important because it deals with one of the key priorities for Canada's transportation system. As mentioned earlier, the energy and environment chapter is also important this year because it gives special attention to energy price increases.

As in previous years, the regional economies chapter gives an overview of transportation by region. Once again, it was impossible to isolate the Nunavut territory because the data required were not available. Next is the chapter on transportation and employment, which shows that the sector is a significant source of employment in the Canadian economy. It also reviews the management–labour issues that the sector confronted in 2000.

Two chapters follow on activities that are growing in importance for the Canadian economy: trade and tourism. For trade, the emphasis is on freight-related activities both in terms of flows and modal distribution. Tourism includes all passenger transportation activities tied to leisure, business and other purposes.

Five chapters on an assortment of transportation topics come last. The chapter on infrastructure illustrates Canada's overall transportation infrastructure, without which transportation services could not be offered. In addition, this chapter addresses incidental services of importance to the safe and secure operations of the transportation system — for example, the air navigation system and marine pilotage services. Three chapters then look at transport service industries from different perspectives: industry structure, freight transportation and passenger transportation. The final chapter looks at prices, productivity and financial performance in the transportation sector.

Sources outside the department have been used quite extensively for the data in this report. The validation of these external data rests first and foremost with the organizations that produce and generate it. Proper care and attention was dedicated throughout the production of this report to data quality and data limitations. Data availability and limitations constraining the analyses reported are indicated within the report. As much as possible, when current timely data were not available, it was **not** estimated. In addition, this report analyses the most current state of the country's transportation system and does **not** try to predict what it may be in coming years.

TRANSPORTATION AND THE CANADIAN ECONOMY

2

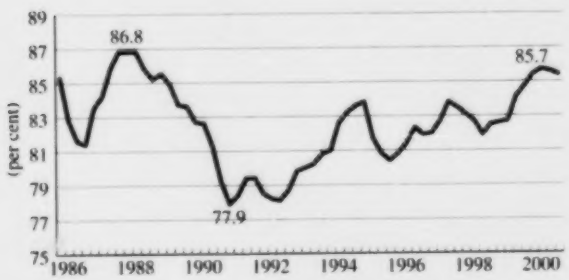
The expansion of the Canadian economy continued in 2000 with the strong economic growth spread across all regions of Canada.

Transportation activity reflects the state of the economy as a whole and this chapter sets out the developments in the economy as a basis for understanding the factors that have affected the demand for transportation services. It also looks at the contribution of transportation to the economy both from the perspective of transportation industries and from the overall demand for transportation in the economy, including both commercial and private transportation.

THE CANADIAN ECONOMY

The Canadian economy continued to expand in 2000 — the ninth year of uninterrupted growth — as real Gross Domestic Product (GDP) increased 4.5 per cent, the highest rate of increase since 1994. The economy moved close to capacity as non-farm goods industries operated at 85.7 per cent of capacity in the second quarter. There were reports of firms facing constraints due to skilled labour shortages. This was the seventh straight quarter of increased capacity utilization. There were signs of easing, however, in the latter part of the year as a slowdown of the US economy affected production and consumption.

FIGURE 2-1: GOODS INDUSTRIES CAPACITY UTILIZATION, 1986 – 2000



Source: Statistics Canada, Cansim matrix 3140

Figure 2-1 shows how close to capacity the goods industry worked in the Canadian economy from 1986 to 2000.

Table 2-1 compares various general economic indicators over the last year and the last five years, and Figure 2-2 charts the growth of real GDP since 1996.

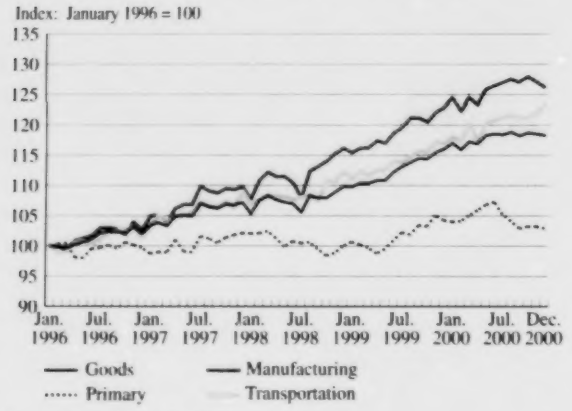
For the second year in a row, business investment spending provided a major source of increased demand in the economy, with a 10.6 per cent increase in real

TABLE 2-1: GENERAL ECONOMIC INDICATORS

	2000	*Percentage change 1999 – 2000*	*Annual percentage change 1995 – 2000*
GDP at Factor Cost (millions of 1992 dollars)			
Total Economy	786,642	4.5	3.5
Goods	257,563	4.7	3.4
Agriculture	12,975	(3.2)	2.1
Forestry	4,677	1.5	0.1
Mining	27,339	6.4	1.1
Manufacturing	143,124	5.7	4.6
Construction	42,346	3.3	3.5
Services	529,079	4.4	3.5
Retail Trade	50,781	5.8	4.7
Transportation	32,114	5.6	4.2
Merchandise Trade (millions of dollars)			
Exports	417,659	15.8	9.5
Imports	363,164	11.1	9.6
Employment (thousands)	14,912	2.6	2.2
Population (thousands)	30,750	0.8	0.9
Income (dollars)			
Personal Disposable Income per capita	20,284	4.7	2.7
Canadian Dollar (US cents per unit)	67.3	0.0	(1.6)
Prices (1992=100)			
Total Economy	112.7	3.6	1.1
Consumer Price Index			
All Items	113.5	2.7	1.7
Transportation	130.7	5.0	2.9

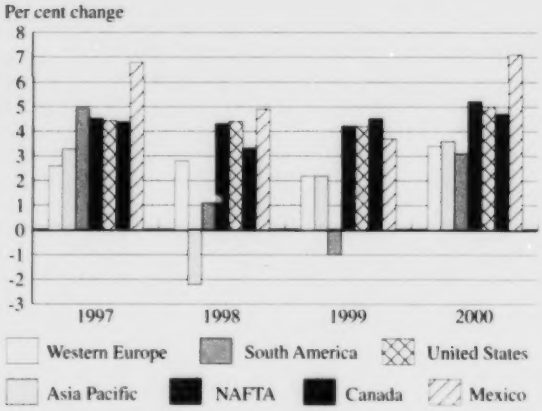
Source: Statistics Canada, Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada

FIGURE 2-2: REAL GDP BY MAJOR SECTOR, 1996 – 2000



Source: Statistics Canada, Cat. 15-001

FIGURE 2-3: REAL GDP IN CANADA AND OTHER REGIONS, 1997 – 2000



Note: Gross Domestic Product (GDP) at market prices.

Source: Statistics Canada, Cat. 13-001, 11-010, US Dept. of Commerce, WEFA

terms. Within business, investment spending on machinery and equipment rose strongly, at 18.9 per cent, a rate comparable with that of the previous year. Spending on telecommunications, computers and office equipment rose 38 per cent in 2000, and accounted for 49 per cent of total business investment. Consumer spending rose four per cent, up slightly from the 3.5 per cent increase the previous year. Government spending on goods and services rose 2.4 per cent, while government capital spending rose 16.2 per cent.

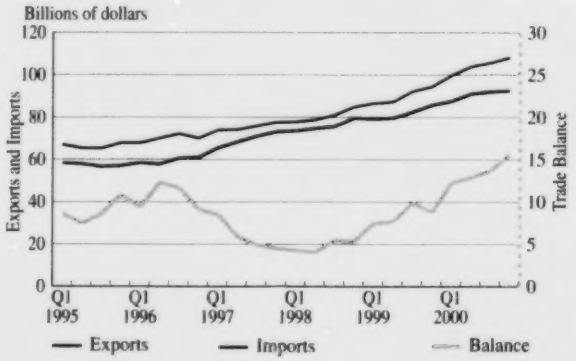
For the fourth year in a row, the manufacturing industries surged ahead, rising 5.7 per cent in 2000; however, the fourth-quarter decline in production in the automotive and electronic goods industries slowed the advance of the sector. Mining activity rose 6.4 per cent, reflecting strong increases in mineral fuel production. Overall production in the primary goods industries rose 2.9 per cent as agriculture activity fell 3.2 per cent and forestry activity increased 1.5 per cent. Construction activity was up 3.3 per cent, due to very strong residential building activity. Retail trade had a good year, increasing 5.8 per cent, although the fall in automobile sales dampened activity here. Transportation activity was up 5.6 per cent, its fourth year of good growth.

As Figure 2-3 shows, the year 2000 was a good one economically for all regions of the world. The US economy posted real economic growth of five per cent, although growth rates decelerated in the second half of the year as business investment and personal consumption expenditures fell. While Canadian merchandise exports to the United States started to falter in the last two quarters, for the year as a whole they rose 16.2 per cent to reach a record $360 billion. Western European real economic growth is expected to be 3.4 per cent in 2000; merchandise exports destined there also increased sharply, by 15.2 per cent. The Asia Pacific region (including China) is expected to show 3.6 per cent in real economic growth in 2000, up from 2.6 per cent in 1999. Japan's economy is growing slowly, and its real GDP increased 1.9 per cent in 2000 up from the 0.8 per cent growth in 1999. Merchandise exports to Japan rose 7.6 per cent in 2000. South America's economy is expected to show growth at 3.6 per cent, a reversal of the one per cent drop in 1999. Like Canada, Mexico benefited from the economic boom in the United States and in 2000 economic activity is expected to increase by about seven per cent.

As illustrated in Figure 2-4, Canada had a record merchandise trade surplus of $54 billion in 2000, up from $34 billion in 1999. Merchandise exports grew

FIGURE 2-4: MERCHANDISE TRADE, 1995 – 2000

(Quarterly, Seasonally Adjusted-Balance of Payment Basis)



Source: Statistics Canada, Cat. 65-001

15.8 per cent to $418 billion, while imports grew 11.1 per cent. Exports to the United States, which made up 86 per cent of all exports, increased 16.2 per cent. Imports from the United States, which made up 74 per cent of all imports, grew only 7.3 per cent. Canada's trade surplus with the United States rose to $92.1 billion, a 50 per cent increase from 1999.

Increases in the export of energy products and machinery and equipment were responsible for the rise in total exports. In 2000, exports of crude oil, natural gas and electricity to the United States rose 76.8 per cent to $54 billion, while machinery and equipment exports rose 22.8 per cent. Telecommunications equipment exports rose 59 per cent. Exports of automotive products increased less than one per cent, while forestry exports increased 5.8 per cent.

In terms of imports in 2000, machinery and equipment purchases by Canadians rose 13.5 per cent to $122 billion and energy product imports rose 65.8 per cent to $18 billion.

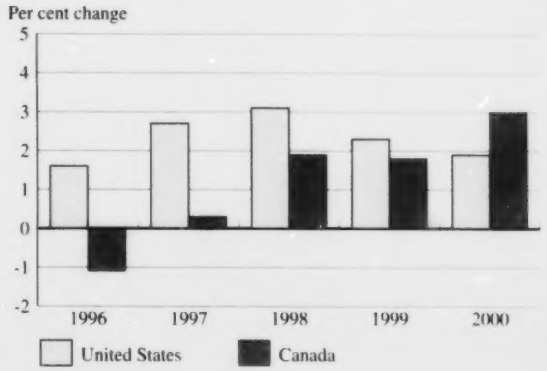
In 2000 employment in Canada was 14.9 million an increase of 378,000 or 2.6 per cent and the fourth year of strong growth. Employment growth was strongest in the service sector where it grew 2.8 per cent while it grew only 2.2 per cent in the goods producing sector. These increases compare to a less than one per cent increase in the total population and a 1.3 per cent increase in the population fifteen years and older from which the labour force is taken.

While the average value of the Canadian dollar in 2000 was unchanged from 1999, at US$0.673, it trended down slightly during the year to close at US$0.667 from US$0.69 in January. The broadest indicator of prices, the GDP deflator, rose 3.6 per cent in 2000, while the Consumer Price Index (CPI) rose 2.7 per cent. Energy prices had a big effect on price levels. The CPI, excluding the effect of energy prices, rose only 1.5 per cent while energy prices paid by consumers rose 16.2 per cent. Energy price increases affected the prices that consumers paid for transportation, as these rose five per cent in 2000.

The strong economy in 2000, along with tax reductions and employment equity payments, meant that real disposable income per capita rose three per cent, just over one per cent more than the increases of the past two years. This meant that real disposable income per capita rose at a greater rate in Canada than in the United States.

Figure 2-5 compares real personal disposable income per capita of Canadians and Americans from 1996 to 2000.

FIGURE 2-5: REAL PERSONAL DISPOSABLE INCOME PER CAPITA, 1996 – 2000

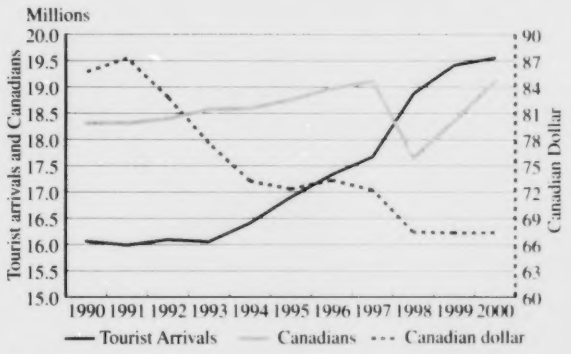


Source: Statistics Canada, Cat. 13-001, US Department of Commerce

In 2000, the number of Canadians engaging in international travel increased on all fronts and in total rose 1.6 per cent. Travel to the United States rose 1.1 per cent, while trips to other countries rose 6.2 per cent. Total trips by foreigners to Canada rose only 0.4 per cent. Trips by Americans fell 0.9 per cent, as both their same-day and overnight trips declined. Trips by other international travellers increased by 4.9 per cent, as European travellers increased their trips by 3.4 per cent and trips from residents of Asia rose 6.8 per cent.

Figure 2-6 shows the amount of international overnight travel to Canada over the last decade.

FIGURE 2-6: INTERNATIONAL OVERNIGHT TRAVEL, 1990 – 2000



Source: Statistics Canada, International Travel Survey, Special Compilations, Bank of Canada

Overview of Provincial Economic Performance

As Table 2-2 shows, the strong economic growth in 2000 was spread across regions of Canada. Only Nova Scotia is expected to have a real growth rate below three per cent. Alberta and Newfoundland had the highest growth of economic activity, fuelled by increased production in the oil and gas industries. Nova Scotia was affected by the end of construction for the Sable Island Project. In New Brunswick, construction and manufacturing activity boosted growth. Ontario and Quebec started to be affected by the weakening US economy in the later part of the year, but had nevertheless good economic growth. Manitoba's manufacturing industries did well in 2000. Saskatchewan benefited from the petroleum and potash industries, although grain prices were weak. British Columbia continued to recover from the effects of the Asian downturn and it has benefited from being close to the US west coast, a region with strong economic performance and a destination for its exports.

TABLE 2-2: PROVINCIAL ECONOMIC GROWTH

(GDP at factor cost in 1992 dollars)

	Per cent change 1999–2000[1]	*Per cent change 1995–2000*
Newfoundland	5.7	3.1
Prince Edward Island	3.8	2.3
Nova Scotia	2.4	2.6
New Brunswick	5.5	3.1
Quebec	4.6	3.0
Ontario	5.3	4.1
Manitoba	3.4	3.3
Saskatchewan	3.7	3.2
Alberta	6.3	4.3
British Columbia	3.1	2.2

1 Forecast.

Source: Statistics Canada, Conference Board of Canada

CONTRIBUTION OF TRANSPORTATION TO THE ECONOMY

The relative importance of transportation to the economy can be looked at from two different perspectives — as commercial or for-hire transportation, or as transportation-related demand. Commercial transportation refers to those service industries that move passengers and goods for a fee, such as airlines, railways and trucking firms. Transportation demand, on the other hand, measures all the expenditures on goods and services that allow for the mobility of households, businesses and government. This section is organized according to these two perspectives.

Commercial Transportation

The importance of commercial transportation or transportation industries can be assessed through the value-added of the industries. Value-added can be seen primarily as payments made by industry to workers or shareholders. It is the commonly used economic measure for assessing the relative importance of industries to the economy, and is used as a measure of the supply of transportation.

TABLE 2-3: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)

Industries	*(Millions of real 1992 dollars) Value-added 2000*	*Per cent of Gross Domestic Product (GDP)*	*Per cent Annual Growth 1999 – 2000*	*Per cent Annual Growth 1995 – 2000*
Air	3,951	0.5	2.8	2.1
Railway	5,070	0.6	7.0	5.4
Marine	2,625	0.3	10.0	4.3
Truck	13,330	1.7	6.8	7.0
Public Passenger Transit	3,439	0.4	4.0	1.0
Other Transport[1]	3,699	0.5	1.1	(0.8)
Transportation Industries	**32,114**	**4.1**	**5.6**	**4.2**
Total GDP	**786,642**	**100.0**	**4.5**	**3.5**

1 Refers principally to taxis, freight forwarders and other miscellaneous transport.

Source: Statistics Canada, Gross Domestic Product by Industry, Cat. 15-001

In 2000, transportation industries accounted for 4.1 per cent of Gross Domestic Product (GDP). Trucking, at 1.7 per cent, made up the largest share of this, while the domestic marine industry, at 0.3 per cent, accounted for the smallest share.

Transportation industries continued to grow faster than the economy in 2000, as they have consistently over the last five years. This growth was dominated by the freight industries — marine (10 per cent), rail (seven per cent) and trucking (6.8 per cent). The air passenger transport industry growth was slow in 2000, while passenger transit industries grew by four per cent, slightly more than the GDP. Table 2-3 breaks down the commercial transportation as a percentage of GDP.

TRANSPORT DEMAND

As mentioned earlier, transportation demand refers to all expenditures on goods and services related to the transportation needs of households, private business and government. In contrast to transportation industries, it is measured using a different method for calculating GDP — the final demand for all goods and services in the economy. Final demand is the sum of personal expenditures, investment, government spending and the trade balance (exports minus imports).

As Table 2-4 shows, transportation demand represented a much larger share of the economy than transportation industries in 2000,[1] with transportation demand accounting for 12.8 per cent of GDP. Transportation demand consists primarily of expenditures on transportation equipment (e.g., cars and trucks) and associated infrastructure (e.g., roads). Transportation equipment is the leading expenditure item in the exports, imports, personal expenditures and business investment sectors. In the government sector, the vast majority of both investment and spending is on roads. Appendix 2-1 gives a more detailed breakdown of personal expenditures, while Chapter 3 of this annual report discusses government expenditures in more detail.

In contrast to transportation industries, transportation demand declined in 2000, decreasing by 0.6 per cent after a 4.5 per cent average annual growth over the last five years. This slowdown was largely due to reduced exports of transportation equipment, as well as reduced inventory accumulation of vehicles, due to the high level of inventory stock. Annual growth in fuel and lubricant purchases by consumers was also negative, reflecting higher fuel prices in 2000.

A slightly different measure of the importance of transportation demand is final domestic demand. This is a measure of expenditures by Canadians made up of personal expenditures, investment and government spending, but excluding foreign trade (exports and imports). This measure generates a somewhat lower estimate of the share of transportation demand — 11.8 per cent of final domestic demand in 2000 — as can also be seen in Table 2-4. This lower value is primarily the result of excluding the trade surplus generated by exports of transportation equipment. In 2000, annual growth in domestic transportation demand (2.5 per cent) was well below the growth in final domestic demand (5.2 per cent), again reflecting growth in inventories and the negative growth in purchases of transportation fuels.

TABLE 2-4: TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)

	(Millions of real 1992 dollars) 2000	*Per cent of Gross Domestic Product (GDP)*	*Per cent Annual Growth 1999 – 2000*	*Per cent Annual Growth 1995 – 2000*
1) Personal Expenditures on Transportation	**72,643**	**7.9**	**3.3**	**4.6**
New and Used Transportation Equipment	29,465	3.2	3.6	7.8
Repair and Maintenance Expenditures	11,225	1.2	9.0	2.5
Transportation Fuels and Lubricants	14,643	1.6	(2.2)	1.5
Other Services related to Transportation Equipment	6,875	0.7	3.3	2.5
Purchased Commercial Transportation	10,435	1.1	4.6	4.5
2) Investment in Transportation	**25,632**	**2.8**	**(0.7)**	**4.0**
Business Investment in Transportation	**19,937**	**2.2**	**(2.1)**	**6.4**
Transportation Infrastructure (roads and railways)	1,033	0.1	(8.2)	(4.0)
Transportation Equipment	16,609	1.8	5.9	9.5
Inventories	2,295	0.2	(35.3)	(3.8)
Government Investment in Transportation	**5,695**	**0.6**	**4.6**	**(2.7)**
Transportation Infrastructure (roads)	5,156	0.6	4.0	(2.9)
Transportation Equipment	539	0.1	9.8	(0.3)
3) Government Spending on Transportation	**9,612**	**1.0**	**(7.7)**	**(1.4)**
Infrastructure Maintenance (roads)	4,681	0.5	(10.8)	(1.8)
Urban Transit Subsidies	2,047	0.2	(32.2)	(1.7)
Other Spending	2,884	0.3	34.4	(1.7)
4) Exports	**81,109**	**8.8**	**0.2**	**6.0**
Transportation Equipment, including parts	73,313	8.0	(0.4)	6.2
Commercial Transportation	7,796	0.8	6.5	4.4
5) Imports	**71,225**	**7.7**	**3.1**	**6.6**
Transportation Equipment, including parts	60,902	6.6	1.8	7.4
Commercial Transportation	10,323	1.1	11.8	2.6
Total Transport Related Final Demand (1+2+3+4-5)	**117,771**	**12.8**	**(0.6)**	**3.6**
Gross Domestic Product at Final Prices	**921,485**	**100.0**	**4.7**	**3.7**
Total Transport Related Domestic Demand (1+2+3)	105,592	11.8	2.5	4.0
Final Domestic Demand	**897,325**	**100.0**	**5.2**	**3.9**

Source: Statistics Canada, National Income and Expenditure Accounts, 13-001; unpublished data, Income and Expenditure Accounts Division, Transport Canada estimates

1 It should be noted that transport demand will tend to underestimate the value of commercial transportation, as much of commercial freight transportation is an intermediate service whose cost becomes embedded in the price of other non-transport demand goods, i.e. shoes, groceries, etc.

APPENDIX 2-1:

PERSONAL EXPENDITURES ON TRANSPORTATION, 1998

(Millions of 1992 dollars)

Personal Expenditures on Transportation	*1998 Value*	*Per cent of total*
New automobiles	10,748	15.3
Used motor vehicles (net)	6,364	9.1
New trucks and vans	10,287	14.6
Bicycles and motorcycles	2,022	2.9
Boats, aircraft, and accessories	810	1.2
Transportation Equipment Purchases	**30,231**	**43.0**
Motor fuels and lubricants	14,447	20.6
Motor vehicle parts and accessories	4,810	6.8
Motor vehicle maintenance and repairs	4,951	7.0
Driving licences, lessons and tests	2,190	3.1
Motor vehicle renting	540	0.8
Auto insurance	2,875	4.1
Transportation Equipment Operating Expenses	**29,813**	**42.4**
Bridge and highway tolls	116	0.2
Parking	609	0.9
Road Infrastructure Use Charges	**725**	**1.0**
Urban transit	1,360	1.9
Railway transport	129	0.2
Interurban bus	449	0.6
Air transport	5,885	8.4
Water transport	149	0.2
Taxis	443	0.6
Moving and storage	518	0.7
Commissions paid to tour operators	599	0.9
Commercial Transportation	**9,532**	**13.6**
Total Personal Expenditures on Transportation	**70,301**	**100.0**

Source: Statistics Canada unpublished data, Income and Expenditure Accounts Division

GOVERNMENT SPENDING ON TRANSPORTATION 3

Transportation gross expenditures by all levels of government increased in 1999/2000.

This chapter describes the transportation expenditures and revenues of all levels of government, by mode as much as possible and within the limitations of available information. The chapter first summarizes all transportation expenditures and revenues by level of government. It then gives a synopsis of federal and provincial revenues from transportation users, followed by a detailed examination of expenditures by level of government. Finally, it presents consolidated expenditures by mode.

This chapter gives an overview of the extent of resources provided at public expense to the transportation sector. When related to the information on facilities and services in other sections of this report, this gives a clear picture of the public sector involvement in transportation. An analysis of the extent of cost recovery in transportation is beyond the mandate of this annual report, however, and it would involve the cumbersome task of accounting for all the costs and revenues — direct and indirect — of the different levels of government that can be tied to transportation activities.

For instance, with respect to indirect costs associated with transportation activities, information would be needed to determine what portion of health-related costs are associated with transportation accidents and/or transportation emissions. It would also require information to measure precisely the revenues generated by levies resulting from the enforcement of transportation's rules and regulations.

GOVERNMENT TRANSPORTATION EXPENDITURES

This section covers spending on transportation by all levels of governments and their agencies. Expenditures are, first, netted of federal government revenues (other than fuel taxes) attributable to transportation users and government transfers received from other levels of government. Although the federal and provincial governments do not earmark tax revenues from transport users to fund transportation initiatives, their transportation revenues are compared with their transportation expenditures to illustrate the trends in the net fiscal pressure from the transport sector. Table 3-1 shows that government expenditures on transportation for the past five years have ranged from $17 billion to $18 billion. While federal expenditures have trended downward, provincial/territorial and local government transportation expenditures have shown an average increase of 5.5 per cent a year since 1996/97.

TABLE 3-1: GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION, 1996/97 TO 2000/01

(Millions of dollars)

	1996/ 1997	*1997/ 1998*	*1998/ 1999*	*1999/ 2000*	*2000/ 2001*[5]
Transport Canada Expenses (Gross)	2,472	2,428	1,415	1,252	1,228
Other Federal Expenses (Gross)	1,013	997	880	738	696
Provincial/Territorial[1]	7,084	6,908	7,889	8,391	N/A
Local[2]	6,579	7,065	7,534	7,662	N/A
Total Transport Expenditures	**17,147**	**17,399**	**17,719**	**18,043**	**N/A**
Transport Canada Revenues	1,353	986	658	379	330
Other Federal Revenues[3]	31	40	42	46	48
Tax Revenues from Transport Users[4]	12,023	12,491	12,977	12,931	N/A
Total Revenues from Transport Users	**13,407**	**13,518**	**13,677**	**13,356**	**N/A**
Net Expenditures	**3,741**	**3,881**	**4,041**	**4,687**	**N/A**

Note: N/A = Not available.
More yearly data are available on Transport Canada's Web site (www.tc.gc.ca).
1 Net of federal transfers as reported by the provinces.
2 Calendar year basis; net of federal and provincial transfers.
3 Revenues from Coast Guard services and small port users.
4 From Table 3-4.
5 Forecast as of January 31, 2001, for full year.

Source: Main Estimates of the Government of Canada; Transport Canada, Finance Directorate; The Canadian Transportation Agency; internal reports from several agencies and federal departments; provincial/territorial departments of transportation; Statistics Canada, Public Institutions Division, unpublished data.

Transportation expenditures by all levels of government increased in 1999/2000 by $324 million, or 1.8 per cent, from 1998/99. Expenditures by local and provincial governments actually showed an increase of 4.1 per cent. Federal transport expenses fell by 13 per cent in 1999–2000 and are forecasted to drop further in 2000/01 by 3.3 per cent from the previous fiscal year. When tax revenues from transport users are applied against transport expenditures, net expenditures reached an estimated $4.7 billion in 1999/2000, up $646 million from the previous year. In the mid-1990s, this figure was around $7 billion.

Federal Expenses Related to Transport Facilities and Services

The federal government provides transportation facilities and services in all modes. As shown in Table 3-2, these include airports and harbour/port operations, modal policy and safety services, and services rendered by the Canadian Coast Guard. Transport Canada also performs several multimodal activities, ranging from emergency preparedness services to the regulation and monitoring of the transport of dangerous goods.

From 1996/97 to 1999/2000, direct federal transport expenses have fallen from $2.2 billion to $1.35 billion. In 2000/01, the operating and capital expenses of the federal government in transport are forecast to drop by 2.3 per cent after several years of decline.

The Canadian Coast Guard represents the federal government's largest single expense in transport, with $428 million forecast for 2000/01. The federal costs of operating federal ports and airports is forecast to reach $213 million by 2000/01, $116 million less than expenditures on safety and policy. This reflects Transport Canada's lesser role in operations and increased role in policy and safety.

TABLE 3-2: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1996/97 TO 2000/01

(Millions of dollars)

	1996/ 1997	*1997/ 1998*	*1998/ 1999*	*1999/ 2000*	*2000/ 2001*[8]
Airports	396	186	140	123	91
Air Navigation Systems	554	-	-	-	-
Aircraft Services	59	56	64	51	59
Coast Guard	540	523	471	480	428
Ports and Harbours[1]	92	85	84	98	122
Roads and Bridges[2]	175	169	156	141	142
Air Safety and Policy[3]	110	113	125	142	151
Marine Safety and Policy	41	65	56	47	49
Road and Rail Safety and Policy[4]	36	36	40	40	38
Multimodal Policy and Safety[5]	79	101	106	90	91
Other Services[6]	31	29	32	35	37
Other[7]	109	103	95	96	107
Total	2,223	1,467	1,370	1,345	1,314

Note: More yearly data are available on Transport Canada's Web site (www.tc.gc.ca).

1 Includes expenses for small fishing ports by Fisheries and Oceans.
2 Includes contributions by Transport Canada to the Federal Bridge Corporation Limited, and expenses by the National Capital Commission, Public Works and Government Services Canada, Parks Canada, and Indian and Northern Affairs.
3 Includes expenses of the Civil Aviation Tribunal.
4 Increase in 1997/98 and 1998/98 expenditures related to the purchase of a ferry.
5 Includes expenses for regulation and the inspection of the transport of dangerous goods, and multimodal safety, policy and analysis.
6 Security and Emergency Preparedness, and Research and Development.
7 Corporate Services of Transport Canada and the Canadian Transportation Agency.
8 Forecast as of January 31, 2001, for full year.

Source: Transport Canada

Federal Subsidies to Transportation

In 2000/01, total federal direct subsidies, grants and contributions are projected to be $604 million, 5.5 per cent less than in 1999/2000. During 2000/01, subsidies to VIA Rail increased and highway transfers continued to decline, as transition and infrastructure programs wound down. The variations in marine subsidies shown in Table 3-3 are related to the purchase of ships for Marine Atlantic Ltd. and the transfer of harbours and wharves to Quebec. Since 1996/97, total subsidies and transfers have fallen by half. This major reduction is a result of the elimination of payments to NAV Canada, lower subsidies to Marine Atlantic Ltd., and reduced highway transfers. Table 3-3 presents more details.

TABLE 3-3: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1996/97 TO 2000/01

(Millions of dollars)

	1996/ 1997	*1997/ 1998*	*1998/ 1999*	*1999/ 2000*	*2000/ 2001*[4]
Air Mode					
Airport Operations	35	46	45	39	47
NAV Canada	292	686	216	-	-
Other	5	15	3	2	1
Total Air	331	747	264	40	48
Marine Mode					
Marine Atlantic	97	91	29	115	38
Other Crown Corporations	3	1	10	-	-
Port Divestiture Fund	0	5	7	22	49
Other Ferry and Coastal Services	43	35	32	32	31
Other[1]	5	4	2	1	25
Total Marine	148	136	80	169	143
Rail Mode					
VIA Rail	236	216	200	170	231
Hopper cars	17	19	21	20	18
Grade Crossings	7	7	7	7	7
Other	7	11	8	8	8
Total Rail	267	254	237	206	265
Highway Modes					
Transition Programs[2]	98	486	93	57	17
Highway Agreements	201	152	126	107	68
Infrastructure Program	193	122	71	-	-
Fixed Link in Prince Edward Island[3]	13	53	44	46	48
Other	9	10	10	19	20
Total Highway Modes	515	822	345	229	152
Grand total	**1,262**	**1,959**	**926**	**645**	**609**

More details are available on Transport Canada's Web site (www.tc.gc.ca).

1 Payments of $36 million to the Government of Quebec for the transfer of harbours and wharves and $21.4 million to the Hamilton Harbour Commission for the settlement of a civil litigation.

2 Offset federal programs for the elimination of the *Western Grain Transportation Act, Maritime Freight Rate Assistance Act, Atlantic Region Freight Assistance Act* programs and the Labrador ferry service buyout in 1997/98.

3 Estimates of funding of transport infrastructure program.

4 Forecast as of January 31, 2001 of full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

Distribution of Provincial/Territorial and Local Expenditures by Province

In 1999/2000, provincial, territorial and local governments spent $16 billion on transportation. This was a $630 million increase, or 4.1 per cent more than in 1998/99. Local expenditures rose by $128 million (1.7 per cent). Expenditures by the provinces increased by $502 million (6.4 per cent). However, in Ontario, provincial expenditures dropped by $1.2 billion, or 44 per cent, mainly as a result of reduced transfers to local governments and transit authorities. A major increase of $1.2 billion was reported in British Columbia to account for the transfer of the BC Ferry debt to the provincial government. In Alberta, the Premier's Task Force on Infrastructure resulted in transportation funding rising by 60 per cent. In the rest of the country, provincial transport expenditures grew by 5.1 per cent. Figure 3-1 illustrates the trends in provincial and local expenses on transport by province/territory.

Since 1995/96, transport spending by provincial and local governments has increased annually by three per cent. The largest increases were in Newfoundland, British Columbia, Prince Edward Island and Alberta. Manitoba and the Northwest Territories had the largest relative declines.

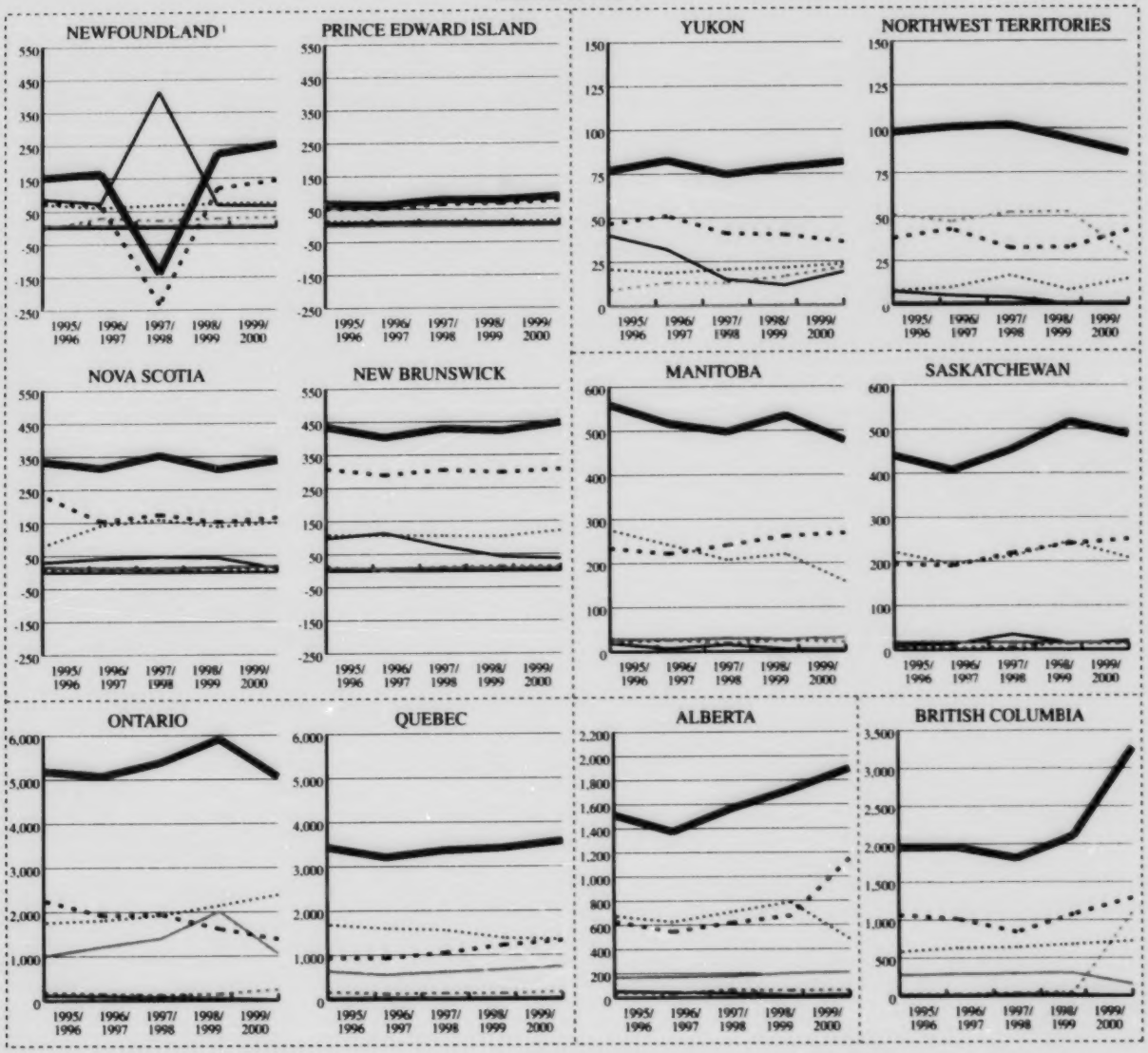
Federal transfers are equivalent to 1.3 per cent of transport spending by local and provincial/territorial governments in 1999/2000. This ratio peaked at 5.4 per cent in 1997/98. In 1999/2000, Newfoundland and the Yukon were the most dependent on federal transfers, which accounted for more than 20 per cent of their spending on transport.

Spending on roads and highways is the most important category of transport-related expenditures for all provinces, although other modes are also significant for some provinces. The proportion for road and highway spending ranged from almost 100 per cent in Prince Edward Island to 66 per cent in the Northwest Territories. Remoteness makes spending on air transportation more significant for the Northwest Territories, where it accounted for 19 per cent of transport spending in 1999/2000. This relative importance of air has varied from one year to another, reaching as high as 45 per cent in 1996/97.

Although transit spending fell by almost $1 billion in Ontario in 1999/2000, its 21 per cent share of total transport expenditures by all levels of government in the provinces is the largest in Canada. Local governments have replaced provincial governments as the main source of transit system expenditures, accounting for 92 per cent. In the early 1990s, their share of transit spending was 22 per cent. Expenditures on transit are also significant in Quebec, Alberta and British Columbia.

FIGURE 3-1: PROVINCIAL/TERRITORIAL AND LOCAL TRANSPORT EXPENDITURES BY PROVINCE, 1995/96 TO 1999/2000

(Millions of dollars)



Note: More yearly data are available on Transport Canada's Website at www.tc.gc.ca.

1 Includes special transaction in 1997/98 of a one-time payment of $348 million to the province of Newfoundland for the Labrador ferry services buyout.

Source: *A) Provinces/Territories: Provincial/Territorial Departments of Transport; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be under reported. Net expenses by local governments are only netted of transfers reported by provincial governments*

B) Local expenditures: Statistics Canada, Public Institutions Division; data are on a calendar year basis

1. (To apply to Local Roads): Roads and streets, parking and snow removal netted of federal and provincial transfers

2. (To apply to transit): Provinces' expenditures and local expenditures netted of estimated transfer from the provinces

3. (To apply to Other): Air, rail, marine and some local expenditures on communication

TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government generates revenues from the use of transportation facilities and services. Revenues from cost recovery initiatives are credited to the federal department's budget, while revenues from other sources are credited to the government's Consolidated Revenue Fund. Both are included in this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute tax revenues collected from transport users. Table 3-4 details government revenues from transport users from 1996/97 to 2000/01.

TABLE 3-4: GOVERNMENT REVENUES FROM TRANSPORT USERS, 1996/97 TO 2000/01

(Millions of dollars)

	1996/ 1997	*1997/ 1998*	*1998/ 1999*	*1999/ 2000*	*2000/ 2001*[9]
Transport Federal Revenues other than Fuel Taxes					
Air Transportation Tax[1]	737	742	295	3	-
Airports	325	160	267	271	239
Aircraft Services	26	30	28	27	28
Other Air Fees	197	6	10	12	12
Marine Revenues[2]	56	67	67	72	77
Lease of Hopper Cars[3]	-	12	12	13	10
Other fees and recoveries[4]	43	10	20	26	12
Total Credited	**1,384**	**1,027**	**700**	**424**	**378**
Other Government Revenues from Transport Users					
Federal Fuel Taxes	**4,439**	**4,625**	**4,742**	**4,786**	**N/A**
Non-Transport Use[5,6]	383	400	379	385	N/A
Road Use[6]	3,826	3,989	4,133	4,169	N/A
Other Modes[6]	230	236	231	233	N/A
Provincial/Territorial Fuel Taxes	**6,399**	**6,579**	**6,795**	**6,973**	**N/A**
Sales Tax Equivalent[6,7]	741	623	557	658	N/A
Net Road Taxes[6]	5,359	5,644	5,967	6,018	N/A
Other Modes[6]	300	313	272	298	N/A
Provincial/Territorial Licences/Fees[8]	2,308	2,309	2,376	2,214	N/A
Total: Tax Revenues from Road Users	**11,494**	**11,942**	**12,475**	**12,401**	**N/A**
Total: Tax Revenues from Non-Road Users	529	549	503	531	N/A
Total: Tax Revenues from All Users	**12,023**	**12,491**	**12,977**	**12,931**	**N/A**

Note: N/A = Not applicable.
More yearly data are available on Transport Canada's Web site (www.tc.gc.ca).

1 Since 1996/97, the Air Transport Tax, formerly netted against Transport Canada's budget has been credited to the Consolidated Revenue Fund.
2 Includes Coast Guard user fees and sales of marine assets credited to the Consolidated Revenue Fund.
3 Credited to Consolidated Revenue Fund.
4 Includes interdepartmental and intradepartmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada or the Consolidated Revenue Fund.
5 Estimated fuel taxes levied public transportation system use.
6 Estimates by Transport Canada.
7 Estimates based on the sales tax that would have applied to provincial fuel prices before the provincial fuel taxes.
8 The amounts shown exclude licence and registration fees dedicated to the Societé de l'Assurance Automobile du Québec.
9 Forecast as at January 31, 2001, for full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

In 1999/2000, the most recent year for which budget information is available for all government levels, government revenues collected from transport users through fuel taxes and permit and licence fees generated by the federal and provincial/territorial governments, totalled $13.4 billion, a slight decline from the previous year. By far, road fuel taxes make up the largest component of tax revenues from transportation, averaging $9.8 billion or 78 per cent from 1995/96 to 1999/2000. Over that period, road fuel tax revenues showed the highest growth rate (3.5 per cent), whereas other fuel taxes advanced by 0.1 per cent, and licences and fees declined by 1.4 per cent.

In 2000/01, federal government transportation revenues other than fuel taxes are expected to total $378 million, down $46 million from 1999/2000. Airport revenues and leases, at $239 million, are to account for most of this total, while marine fees are to bring in an additional $77 million. Other federal revenues not credited to transport, such as the revenues from the leases of hopper cars or the sale of port assets, are also reported in Table 3-4.

OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses and revenues by mode from 1996/97 to 2000/01. In addition, Table 3-5 shows expenditures by the provincial/territorial and local governments, netted of transfers received from other levels of government, from 1996/97 to 2000/2001.

Total government spending on roads has risen at 2.5 per cent a year to reach $12.5 billion in 1999/2000. Road expenditures now account for 69 per cent of overall spending on transportation. From 1996/97 to 1999/2000, the provincial and federal governments collected more money from road users than all levels of government spent on highways and local streets. A surplus of $85 million was generated over the period reviewed.

In 1998/99, the strong increase in transit funding came from the Ontario government's large capital subsidies to transit systems. In 1999/2000, spending on transit systems accounted for 12 per cent of all government expenditures on transportation. With the $1 billion reduction in 1999/2000, spending on transit systems by Ontario is back to its mid-1980s level.

In 1999/2000, the air mode accounted for 2.3 per cent of gross government spending on transportation. This spending has declined by 73 per cent since 1996/97. About 11 per cent of government annual transport spending has been apportioned to the marine mode in 1999/2000. In previous years, total government expenditures in the marine mode have averaged five per cent of total government spending on transportation. The increase is due to the transfer of the BC Ferry debt to the provincial government.

Spending on the rail mode has fallen by 23 per cent since 1996/97, accounting for 1.3 per cent of gross government spending on transportation in 1999/2000. Close to 80 per cent of this spending is related to subsidies to rail passenger services.

In 1999/2000 the federal and provincial governments spent $2.6 billion on the air, marine and rail modes combined while generating $0.9 billion in fees and tax revenues from transport users. The remaining $0.7 billion accounted for 36 per cent of total net expenses by governments on transportation.

The category "Other" in Table 3-5 includes overhead expenses by all levels of government and expenditures related to multimodal activities. Less than four per cent of government transportation spending falls under this category.

TABLE 3-5: TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT

(Millions of dollars)

	1996/ 1997	*1997/ 1998*	*1998/ 1999*	*1999/ 2000*	*2000/ 2001*[1]
Federal O&M[2], Capital and Subsidies[A]					
Air	1,450	1,102	594	356	350
Marine	822	809	691	795	742
Rail	281	267	252	221	280
Road	712	1,014	526	396	317
Other	220	234	234	222	235
Total	**3,485**	**3,426**	**2,296**	**1,990**	**1,924**
Provinces/Territorial/Local[B]					
Air	96	76	75	62	N/A
Marine	73	92	120	1,179	N/A
Rail	11	2	2	5	N/A
Road	10,915	10,924	11,622	12,120	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other	274	318	348	455	N/A
Total	**13,662**	**13,974**	**15,423**	**16,053**	**N/A**
Total Expenses: All Government Levels					
Air	1,546	1,178	668	418	N/A
Marine	895	901	811	1,974	N/A
Rail	292	269	254	226	N/A
Road	11,626	11,938	12,147	12,516	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other	494	552	582	677	N/A
Total	**17,147**	**17,399**	**17,719**	**18,043**	**N/A**
Government Revenues from Transport Users[C]					
Road Users	11,494	11,943	12,475	12,401	N/A
Other Modes	1,886	1,567	1,188	938	N/A
Multimodal	26	8	14	16	N/A
Total	**13,407**	**13,518**	**13,677**	**13,356**	**N/A**
Net Transportation Expenses					
Road	133	(5)	(328)	115	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other Modes	846	781	545	1,680	N/A
Multimodal	467	544	567	661	N/A
Total	**3,741**	**3,881**	**4,041**	**4,687**	**N/A**

Note: More details are available on Transport Canada's Web site (www.tc.gc.ca).

1 Forecast as at January 31, 2000.

2 O&M: Operating and Maintenance.

Source:

A Transport Canada; Main Estimates and Public Accounts of the federal departments concerned.

B Provincial/territorial departments of transportation; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division; data are on a calendar year basis.

C Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation.

TRANSPORTATION AND SAFETY 4

The safety record of Canada's transportation system continues to show improvement.

One of Transport Canada's most important tasks is to ensure that Canada's transportation system is safe. This is done by the development of practical and effective safety programs and regulations, and by ensuring compliance with these regulations and related technical standards. To achieve this objective, Transport Canada regulates and co-ordinates safety-related matters in several areas, including: aeronautics and airports; air and marine navigation; marine shipping facilities; commercial shipping; new motor vehicle standards; railway facilities and operations; bridges and canals connecting provinces with each other or with the United States; and transportation of dangerous goods.

Transport Canada works closely with all stakeholders — including the federal, provincial, territorial and municipal governments, industry, and non-governmental organizations — to help ensure that Canada's transportation system is among the world's safest. The Transportation Safety Board and provincial governments, in particular, play important roles in maintaining the safety of the system nationwide. In addition, Transport Canada collaborates with foreign governments, agencies and organizations on several international safety initiatives.

Using reports of rail, marine and aviation accidents and incidents made to the Transportation Safety Board as its primary source of information, this chapter describes recent trends in occurrence statistics for all modes of transport, as well as for the transportation of dangerous goods.

TRANSPORTATION OCCURRENCES

The year 2000 was a success for transportation safety, with declines in the number of accidents in the aviation, marine and rail sectors. The number of road casualty collisions, however, was up slightly from the record low level achieved in the previous reporting year. In fact, the 321 reported accidents involving Canadian registered aircraft and the 449 reported shipping accidents represent the lowest numbers of accidents reported in these modes in the last 25 years. All transportation modes continue to reflect a continuing downward trend in the number of accidents. Accidents involving dangerous goods, however, have been increasing over the last few years.

Unfortunately, the downward trend in the number of accidents in 2000 is tempered somewhat by the numbers of fatalities reported. While aviation and rail fatalities were down in 2000 (by three per cent and 18 per cent, respectively, compared with 1999 levels), there was a slight increase in the number of fatalities in marine (seven per cent). Road transportation showed a one per cent increase in 1999.

As they do not take into account the specifics of each mode, however, these comparisons can be misleading because they fail to reflect the level of activity or exposure to risk associated with each means of transportation.

The year 2000 also saw increases in the number of aviation and marine incidents reported to the Transportation Safety Board, up 3 per cent and 36 per cent respectively over 1999 levels. The number of reported rail incidents was 32 per cent lower than the previous five-year average.

Table 4-1 presents the most recent statistics on transportation occurrences by mode, including comparisons with the previous five-year averages.

Taking into account the level of activity in each mode, the accident rates for 2000 continue to exhibit a general downward trend, with decreases in each of the aviation, rail and marine modes (reliable activity measures for motor vehicles were not available).

TABLE 4-1: TRANSPORTATION OCCURRENCES BY MODE, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)

	Aviation	*Marine*	*Rail*	*Road*[1]
Accidents				
2000	321	449	1,062	153,720
Five-year average	363	571	1,180	159,884
Fatalities				
2000	63	31	87	2,969
Five-year average	81	33	111	3,140
Incidents				
2000	726	243	330	N/A
Five-year average	703	166	436	N/A

1 Road occurrence statistics relate to 1999 and 1994-1998 which are the most recent statistics available and are based on 1999 Canadian Motor Vehicle Traffic Collision Statistics – TP 3322. Road accidents are casualty collisions, which exclude collisions that involve property damage only.

Source: Transport Canada, based on Transportation Safety Board data

Table 4-2 presents data on accident rates by mode for the most recent year, as well as the five-year average.

TABLE 4-2: ACCIDENT RATES IN TRANSPORTATION, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)

	Aviation[1]	*Marine*[2]	*Rail*[3]	*Road*
Accidents				
2000	7.5	3.1	13.3	N/A
Five-year average	9.2	3.6	15.1	N/A

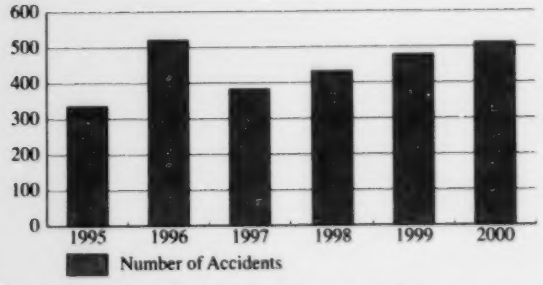
1 Per 100,000 hours flown (Canadian registered aircraft only).
2 Per 1,000 commercial vessel trips.
3 Per million train-miles.

Source: Transport Canada, based on Transportation Safety Board data and data from Statistics Canada. Activity levels for 2000 are based on forecasts

Keeping in mind that each has its own inherent limitations, these aggregate measures of activity provide a point of reference for interpreting the occurrence statistics. For example, in rail, the measure of train-miles captures only that activity that occurs on main-track lines and does not extend to activity on yards, spurs and sidings. Considering that roughly one half of rail occurrences take place on non-main-track areas, this tends to overstate the actual accident rate. Likewise for marine, measures of vessel movements do not directly take into account the overall distance travelled. Activity is also primarily limited to vessels of greater than 15 gross registered tonnage and excludes fishing vessels. For aviation, accident rates can vary significantly whether measured through flying hours, aircraft movements or licences.

Figure 4-1 shows the number of reportable accidents involving transportation of dangerous goods from 1995 to 2000.

FIGURE 4-1: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1995 – 2000



Source: Transport Canada, Dangerous Goods Accident Information System

RAIL

The federal portion of the national railway system has been decreasing steadily since 1996, with 10 per cent less track belonging to carriers falling under federal jurisdiction today than in 1996. The statistics presented in this section include all railways under federal jurisdiction.

In 2000, there were a total of 1,062 railway accidents reported to the Transportation Safety Board, six per cent below the 1999 total and 10 per cent below the five-year average. This decrease in accidents and an accompanying increase in train-miles results in a lower accident rate in 2000, compared with 1999. The 2000 accident rate decreased to 13.3 accidents per million train-miles from 14.4 in 1999 and was well below the previous five-year average of 15.1. Train-miles for 2000 are based on an estimated 80.1 million, compared with 78.5 million for 1999.

Of the total rail-related accidents reported in 2000, non-main-track train derailments and collisions accounted for the largest portion, with 47 per cent of the total. Crossing accidents followed with 25 per cent, then main-track train derailments and collisions with 12 per cent. Trespasser accidents accounted for seven per cent in 2000, while all other accident types accounted for nine per cent. The non-main-track derailments and collisions mainly involved a single car derailing in a yard at a relatively slow speed and with a low public risk.

In 2000, 38 per cent of the non-main-track derailments and collisions involved single non-dangerous goods cars. Dangerous goods were involved in 23 per cent of the total reported accidents, of which four accidents resulted in the release of a dangerous goods product.

Accidents involving passenger/commuter trains decreased to 61 in 2000, down from 71 in 1999 and 73 for the previous five-year average.

Between April 1999 and July 2000, there were three accidents involving VIA Rail trains and the misalignment of main track switches in non-signalled territory (Thamesville, Ontario, on April 23, 1999; Miramichi, New

Brunswick, on January 30, 2000; and near Guelph, Ontario, on July 9, 2000). The Thamesville and Guelph accidents occurred on federally regulated main line tracks.

After reviewing the industry's actions to resolve the problem of misaligned main track switches in non-signalled territory, Transport Canada initiated further regulatory action under Section 33 of the *Railway Safety Act* (RSA) in November 2000. This action was issued in the form of an Emergency Directive on Canada's major railways.

A total of 330 rail incidents were reported to the Transportation Safety Board in 2000, down slightly from 333 in 1999 and 436 for the previous five-year average. The largest portion of these incidents (57 per cent) involved cars carrying dangerous goods that leaked a product, but not as a result of an accident.

Table 4-3 summarizes rail accidents reported from 1995 to 2000, including the 1995–1999 average.

TABLE 4-3: ACCIDENTS IN RAIL TRANSPORTATION, 1995 – 2000

Year	*Number of Accidents*	*Accident Rate*[1]	*Fatalities*	*Serious Injuries*
1995	1,276	16.3	120	132
1996	1,305	17.2	117	129
1997	1,116	14.0	109	101
1998	1,075	13.7	101	75
1999	1,129	14.4	106	96
1995–1999 Average	1,180	15.1	111	107
2000	1,062	13.3	87	66

1 Number of accidents per million train-miles.

Source: Transport Canada, based on Transportation Safety Board data

In 2000, there were 87 rail fatalities, down from 106 in 1999 and well below the five-year average of 111. There were also 84 fatal accidents, down 14 per cent from the 1999 total of 98 and below the five-year average of 103. The majority of the fatalities were related to rail grade crossing accidents or accidents involving trespassers.

Table 4-4 shows the number of railway crossing accidents by province from 1995 to 2000, including the 1995–1999 average and Canada-wide totals.

A total of 261 crossing accidents occurred in 2000, which is an eight per cent decrease from the 1999 total of 283 and well below the five-year average of 321. Total fatalities as a result of crossing accidents decreased to 33 in 2000, down from 37 in 1999 and 41 for the five-year average.

Crossing accidents that occurred at public crossings accounted for 85 per cent of the total reported in 2000.

TABLE 4-4: RAILWAY CROSSING ACCIDENTS BY PROVINCE, 1995 – 2000

Province	*1995*	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Accidents[1]							
Newfoundland/ Prince Edward Island/ Nova Scotia (171)	5	8	5	3	7	5.6	3
New Brunswick (325)	12	6	5	2	5	6.0	3
Quebec (2,547)	58	61	51	48	51	53.8	42
Ontario (5,457)	121	91	75	65	94	89.2	88
Manitoba (3,045)	33	46	30	34	19	32.4	21
Saskatchewan (6,446)	44	49	33	38	30	38.8	31
Alberta (3,759)	66	71	70	54	52	62.6	46
British Columbia (1,084)	40	33	38	29	24	32.8	27
Canada[2] **(22,834)**	**379**	**365**	**307**	**273**	**283**	**321.4**	**261**
Fatal Crossing Accidents	39	39	30	38	32	35.6	30
Passenger Train Related Accidents	26	40	30	29	31	31.2	18

1 Figures in brackets denote estimated number of public crossings in each province or grouping of provinces as of January 2001.
2 The Canadian total includes one accident in the Northwest Territories in 1999.

Source: Transport Canada, based on Transportation Safety Board data

Automated crossings accounted for the largest portion, with 54 per cent; however, these generally occurred in areas with relatively high vehicle traffic. The most significant decrease in 2000 was crossing accidents at private crossings, where numbers decreased to 38 in 2000 from 50 in 1999.

Fatal crossing accidents constituted 36 per cent of total fatal accidents in 2000, up from 33 per cent in 1999 and the previous five-year average of 35 per cent. Crossing accidents involving passenger trains declined to 18 from 31 in 1999 and 31.2 for the five-year average.

Table 4-5 summarizes trespasser accidents by province from 1995 to 2000, including the 1995–1999 average and Canada-wide totals.

TABLE 4-5: RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 2000

Province	*1995*	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Accidents							
Newfoundland/ Prince Edward Island/ Nova Scotia	0	4	0	0	0	0.8	0
New Brunswick	6	3	0	0	0	1.8	1
Quebec	27	32	15	12	26	22.4	14
Ontario	41	55	47	36	46	45.0	41
Manitoba	13	1	4	4	1	4.6	1
Saskatchewan	3	3	4	2	3	3.0	2
Alberta	13	8	7	10	10	9.6	6
British Columbia	9	21	21	14	9	14.8	14
Canada	**112**	**127**	**98**	**78**	**95**	**102.0**	**79**
Fatal Trespasser Accidents	63	67	69	59	61	63.8	53
Passenger Train Related Accidents	23	28	24	25	23	24.6	28

Source: Transport Canada, based on Transportation Safety Board data

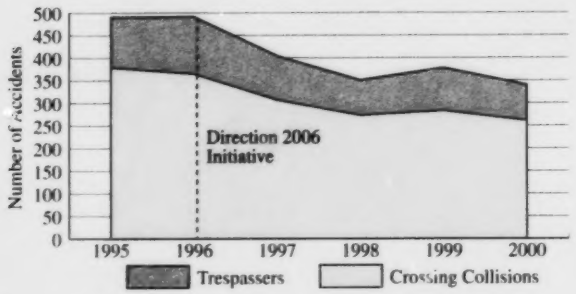
In 2000, the number of trespasser accidents decreased to 79 from 95 in 1999, well below the previous five-year average of 102. The majority of these accidents occurred in Ontario, which had approximately one half the total trespasser accidents reported in 2000. The number of fatal trespasser accidents also declined to 53 from 61 in 1999, again well below the five-year average of 64. Two thirds of all rail-related fatal accidents were the result of trespasser accidents, a consistent ratio during the past five years.

In partnership with stakeholders, Transport Canada has undertaken several initiatives to address safety concerns in these areas.

Transport Canada participates in Direction 2006, a program that aims to reduce grade crossing collisions and trespassing incidents to 50 per cent below 1996 levels by the year 2006. Direction 2006 involves public awareness and education programs; monitoring and enforcement; safety programs; and research to improve safety and awareness of the risks related to grade crossings and trespassing. Public and private railway stakeholders, provincial and municipal governments, law enforcement agencies, safety organizations, and railway companies and their unions are all partners with Transport Canada in the program. In addition, Transport Canada administers a funding program for safety improvements at selected grade crossings, and is a partner with the Railway Association of Canada in the "Operation Lifesaver" public awareness program. The department also has a comprehensive compliance activity related to safety at crossings and trespass areas.

Figure 4-2 illustrates the number of crossing and trespasser accidents from 1995 to 2000. Direction 2006 was established in 1996.

FIGURE 4-2: CROSSING AND TRESPASSER ACCIDENTS, 1995 – 2000



Source: Transport Canada, based on Transportation Safety Board data

ROAD

For motor vehicle traffic collisions, the most recent data available are from 1999 for fatalities, injuries and casualty collisions. For property damage only (PDO) collisions, the most recent data available are from 1998.

DOMESTIC OPERATIONS

Over the last several decades, Canada's road safety record has continued to improve steadily. In 1999, a total of 2,969 fatalities resulted from motor vehicle collisions, the second lowest annual total in 44 years (statistics of this nature have been recorded since 1945). Road-related fatalities were up 1.2 per cent from the level in 1998, but 5.5 per cent below the 1994–1998 average.

Table 4-6 illustrates the national number of road-related casualty collisions, fatalities and injuries from 1994 to 1999.

TABLE 4-6: TOTAL ROAD CASUALTY COLLISIONS, FATALITIES AND INJURIES, 1994 – 1999

Year	*Casualty Collisions*	*Fatalities*	*Persons Injured*
1994	169,649	3,263	245,110
1995	167,044	3,351	241,935
1996	158,990	3,091	230,890
1997	152,764	3,063	221,349
1998	150,974	2,934	217,754
1994 – 1998 Average	159,884	3,140	231,408
1999	153,720	2,969	222,275
Per cent change 1999/Average	(3.9)	(5.5)	(3.9)
Per cent change 1999/1998	1.8	1.2	2.1

Casualty collisions include all reportable motor vehicle collisions that result in a fatality or injury. The downward progression in casualty collisions was interrupted in 1999, with the national total increasing 1.8 per cent from 1998. Nonetheless, this was still some 3.9 per cent below the five-year average for 1994 to 1998.

Table 4-7 shows the number of road fatalities in Canada classified by the six major users of roads.

TABLE 4-7: FATALITIES BY CATEGORY OF ROAD USER, 1994 – 1999

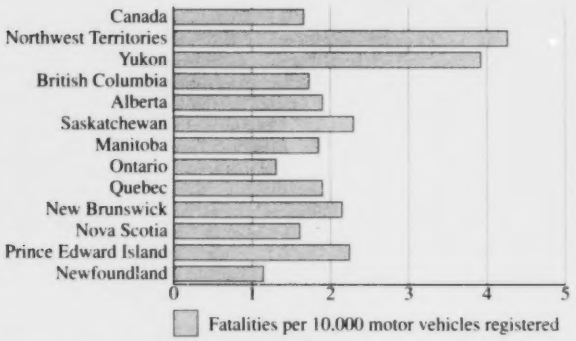
	1994	*1995*	*1996*	*1997*	*1998*	*1994-1998 Average*	*1999*
Drivers	1,626	1,652	1,518	1,540	1,451	1,557	1,539
Passengers	851	920	825	812	716	825	734
Pedestrians	429	416	465	402	402	423	414
Bicyclists	86	64	60	67	77	71	69
Motorcyclists	163	166	128	122	165	149	159
Other	108	133	95	120	123	116	54

The "drivers" category represents the single largest segment of the road user population and also accounts

for the largest share of road fatalities. In 1999, this category of road user accounted for 52 per cent of total road fatalities, while all motor vehicle occupants made up 77 per cent of road user fatalities. The "pedestrians" and "motorcyclists" categories accounted for 14 per cent and five per cent of fatalities, respectively.

Figure 4-3 compares average road fatality rates by jurisdiction for 1997 to 1999. It shows that the highest fatality rates in Canada were in the Northwest Territories and the Yukon, which reflects the relatively low number of vehicles registered in those territories and the more difficult driving conditions. Ontario, with the largest road network and the highest number of vehicle registrations, continued to have one of the lowest fatality rates during this period, with only 1.3 fatalities per 10,000 road motor vehicles registered. Only Newfoundland was lower at 1.1.

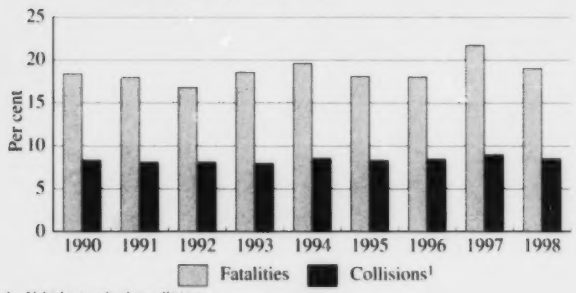
FIGURE 4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY JURISDICTION, 1997 – 1999



Source: Canadian Motor Vehicle Traffic Collision Statistics

Figure 4-4 shows the percentage of vehicles involved in collisions with commercial vehicles and the corresponding percentage of fatalities from 1990 to 1998. (Please note that information separated by commercial vehicle is currently only available to 1998.)

FIGURE 4-4: PERCENTAGE OF ROAD COLLISIONS AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1998



1 Vehicles involved in collisions

Source: Transport Canada, Traffic Accident Information Database

During this time, vehicles involved in collisions with commercial vehicles accounted for approximately eight per cent of all vehicles involved in road collisions, yet accounted for roughly 18.7 per cent of all road fatalities. In 1998, there were 557 fatalities resulting from collisions involving commercial vehicles, down from 664 fatalities in 1997.

Table 4-8 provides a breakdown of commercial and other vehicles involved in fatal collisions by type of vehicle from 1993 to 1998, including the 1993–1997 five-year average.

TABLE 4-8: COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998

Vehicle Type	*1993*	*1994*	*1995*	*1996*	*1997*	*1993-1997 Average*	*1998*
Commercial							
Bus	37	43	31	39	32	36	43
Trucks greater than 4,536 kg	212	197	163	167	179	184	166
Tractor-trailers	343	328	346	294	335	329	286
Total Commercial Vehicles	**592**	**568**	**540**	**500**	**546**	**549**	**495**
Other vehicles involved in collisions with commercial vehicles	599	574	533	458	486	530	456
Total vehicles involved in collisions with commercial vehicles	1,191	1,142	1,073	958	1,032	1,079	951
All other vehicles involved in collisions	3,933	3,590	3,606	3,438	3,245	3,563	3,232
Total: all vehicles	**5,124**	**4,732**	**4,679**	**4,396**	**4,277**	**4,642**	**4,183**

Source: Transport Canada, Traffic Accident Information Database

TABLE 4-9: VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998

Vehicle Type	*1993*	*1994*	*1995*	*1996*	*1997*	*1993-1997 Average*	*1998*
Automobile	2,866	2,605	2,583	2,431	2,276	2,552	2,167
Light trucks and vans	1,147	1,083	1,077	1,037	1,059	1,081	1,053
Truck:							
Tractor-trailer	343	328	346	294	335	329	286
Truck greater than 4,536 kg	212	197	163	167	179	184	166
Other	23	23	25	15	21	21	18
Bus:							
School	12	16	10	12	8	12	10
Intercity	1	7	5	7	4	5	5
Transit	10	11	6	7	9	9	11
Bus unspecified	14	9	10	13	11	11	17
Motorcycle[1]	217	164	170	141	125	163	169
Bicycle	85	91	70	63	74	77	79
Farm equipment	31	32	36	37	32	34	42
Snow equipment	56	39	64	50	41	50	49
Train/Streetcar	19	20	11	16	11	15	16
Motor home	18	32	24	28	19	24	4
All-terrain vehicles	10	13	4	8	9	9	31
Other	60	62	75	70	64	66	60
Total	**5,124**	**4,732**	**4,679**	**4,396**	**4,277**	**4,642**	**4,183**

1 Includes mopeds

Source: Transport Canada, Traffic Accident Information Database

Table 4-9 shows the number of vehicles involved in fatal motor vehicle collisions by type of vehicle from 1993 to 1998, including the 1993–1997 five-year average.

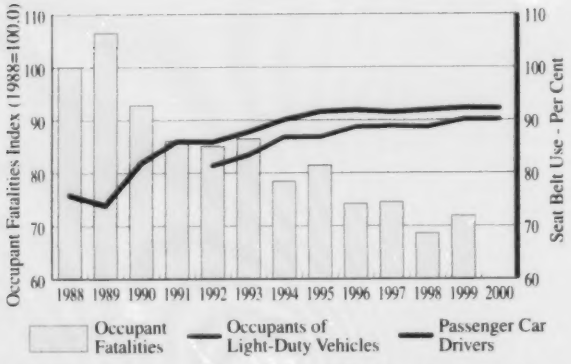
Down slightly from the previous five-year average of 55 per cent, private automobiles accounted for 52 per cent of the vehicles involved in fatal collisions in 1998. Light-duty trucks and vans had the second largest share of fatal collisions by vehicle, with 25 per cent, up from 23 per cent for the 1993–1997 period. The combined categories of truck (tractor-trailer, trucks greater than 4,536 kilograms and other) followed with 11 per cent.

Seat Belt Use

Seat belt use in motor vehicles is believed to be the most effective way of reducing fatalities on highways. Under the *Motor Vehicle Safety Act* (MVSA), Transport Canada has required motor vehicle manufacturers to install seat belts in all new passenger cars since January 1, 1971. Beginning in January 1976, the provincial and territorial governments gradually enacted legislation that required the use of seat belts.

Figure 4-5 shows the results of the national seat belt surveys conducted each June since 1988. These surveys determined the rates at which drivers of passenger cars and occupants of light-duty vehicles wore seat belts. The results for the latter category have been collected only since 1992. The figure also shows that occupant fatalities decrease as the use of seat belts increases.

FIGURE 4-5: NATIONAL SEAT BELT USE COMPARED TO OCCUPANT FATALITIES, 1988 – 2000



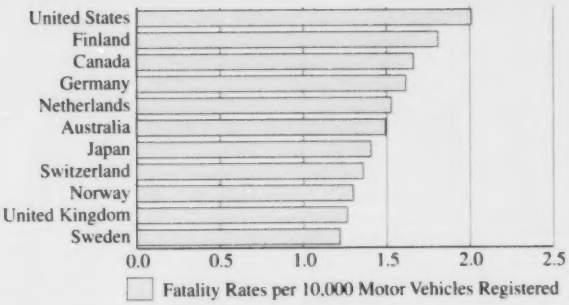
Source: Transport Canada, National Seat Belt Survey; Traffic Accident Information Database

International Comparisons

By international standards, Canada ranks as one of the top Organisation for Economic Co-operation and Development (OECD) member countries, in part because of its continued success in improving motor vehicle safety.

Figure 4-6 shows the average motor vehicle fatality rates among selected OECD countries from 1997 to 1999.

FIGURE 4-6: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG SELECTED OECD COUNTRIES, 1997 – 1999



Source: International Road Traffic Accident Database, OECD

One of the indicators of motor vehicle activity and exposure to risk are vehicle ownership rates. Canada's vehicle ownership rate was 59.5 per 100 inhabitants in 1998, compared with the US rate of 76.8, the highest rate among OECD countries. Higher ownership rates in Canada and the United States indicate a greater degree of reliance on this mode of transportation, which correlates with a generally higher exposure to risk for road users.

Marine

Overview

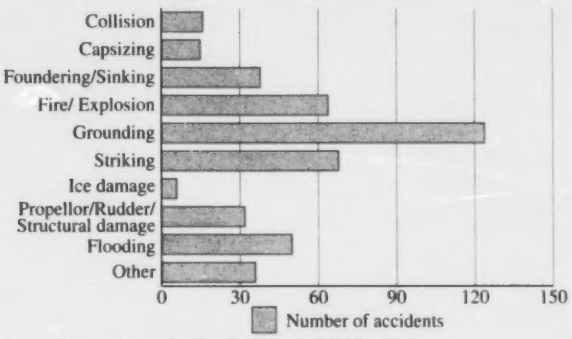
During the last decade, there has been a downward trend in the number of shipping accidents. On average, accidents have decreased by eight per cent per year since 1990. This trend continued in 2000, with 449 accidents reported to the Transportation Safety Board, which represented a 16 per cent decrease from 1999 and a 21 per cent decrease from the 1995 – 1999 average.

In 2000, as in preceding years, the largest proportion of shipping accidents by type were grounding at 28 per cent, followed by striking at 15 per cent, fire/explosion at 14 per cent and flooding at 11 per cent. These accident types have shown the largest declines in recent years. Increases were noted, however, in the 15 recorded capsizing accidents, compared with six in 1999, and the 38 recorded foundering/sinking accidents, compared with

32 in 1999. Both these types of accidents, however, remained within the range of their five-year averages.

Figure 4-7 shows the number of accidents, by type, in 2000.

FIGURE 4-7: SHIPPING ACCIDENTS, BY CATEGORY, 2000



Source: Transport Canada, based on Transportation Safety Board data

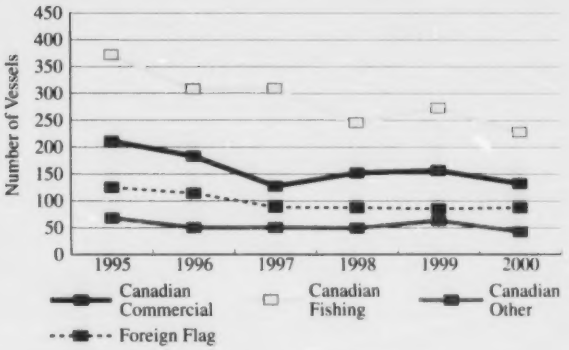
In 2000, 402 Canadian vessels were involved in shipping accidents. As is historically the case, fishing vessels constituted the largest percentage of these, at 57 per cent; the total number of fishing vessels involved, however, was still a 24 per cent decrease compared with the previous five-year average. The most reported accidents by type for Canadian fishing vessels were grounding at 31 per cent, and flooding at 18 per cent. The largest reductions from the five-year averages occurred in instances of flooding and fire/explosion.

Also in 2000, 132 Canadian commercial vessels were involved in shipping accidents, a 20 per cent decrease from the previous five-year average. Some of these vessels pose a greater risk to persons and the environment. For these vessels, there were 22 accidents involving ferries and 15 accidents involving passenger vessels, both of which remained on a par with recent years. There were six accidents involving tanker vessels, which represented approximately one half of the five-year average. The most significant decrease for commercial vessels related to bulk carrier/ore, bulk, oil (OBO) vessels, with 25 accidents in 2000, compared with the five-year average of 37. Striking accidents, at 28 per cent, and grounding accidents, at 24 per cent, respectively, were the most prevalent accident types reported by Canadian commercial vessels.

Service, offshore, research and other Canadian vessel accidents numbered 42 in 2000, a decline of 33 per cent from 1999 and a reduction of 25 per cent from the five-year average. Service vessel involvement was predominant and represented one half of the 2000 figure.

Figure 4-8 shows the number of vessels involved in shipping accidents by vessel flag and vessel category from 1995 to 2000.

FIGURE 4-8: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL FLAG AND VESSEL CATEGORY, 1995 – 2000



Source: Transport Canada, based on Transportation Safety Board data

In 2000, 87 foreign flag vessels were involved in shipping accidents, down 13 per cent from the previous five-year average. Most foreign vessel categories remained within range of their respective five-year averages. The exception was bulk carrier/ore, bulk, oil (OBO) vessels, which showed a 28 per cent reduction. Once again, these vessels represented the largest percentage of shipping accidents involving foreign vessels, at 39 per cent, followed by cargo/container vessels at 22 per cent, and fishing vessels at 13 per cent. Nearly one third of foreign-flag vessel accidents in 2000 were striking accidents, while almost one quarter were grounding accidents.

In 2000, there were also 76 reported accidents aboard ship, up 10 per cent from 1999 and 27 per cent from the five-year average. Of these 76 accidents, fishing vessels accounted for 45 per cent, commercial vessels for 37 per cent, and service vessels for 15 per cent.

There were 21 fatal marine accidents in 2000 with 31 related fatalities, down slightly from the five-year average of 23 fatal accidents and 33 fatalities. Of the 21 fatal accidents, 13 fatalities resulted from fishing vessel occurrences. One third of the fatal accidents resulted in multiple casualties. Approximately one half (15) of the total fatalities were the result of accidents aboard ship.

Twenty-eight vessels were lost in 2000, a decrease of 52 per cent from the five-year average. All but one vessel was less than 150 gross registered tonnage. Fishing vessels accounted for the most losses at 23. Of the 20 vessels for which year built was available, the average vessel age was 18 years.

In 2000, there were 243 shipping incidents, which is 46 per cent above the five-year average. The increase was largely related to incidents involving engine/rudder/propeller problems, which represented 42 per cent of the incidents, while close-quarters situations accounted for about 25 per cent. Of the 323 vessels involved, fishing and ferry/passenger vessel categories reported 20 per cent each.

There were 87 marine injuries in 2000, an increase of 10 per cent compared with the five-year average. Of these, fully 81 per cent involved accidents aboard ship.

Table 4-10 shows the marine occurrences by type from 1995 to 2000, as well as the 1995–1999 five-year averages.

TABLE 4-10: MARINE OCCURRENCES, 1995 – 2000

	1995	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Shipping Accidents	695	605	533	490	533	571	449
Accidents Aboard Ship	56	58	59	59	69	60	76
Fatalities	39	25	24	48	29	33	31
Vessels Lost	82	60	60	49	45	59	28
Incidents	199	132	155	167	179	166	243
Injuries	82	71	83	80	80	79	87

Source: Transport Canada, based on Transportation Safety Board data

Regional Overview

For occurrence reporting purposes, the Transportation Safety Board defines six regional boundaries[1]. Accidents that occur in foreign waters involving Canadian vessels are also included in the regular statistical occurrence reporting. For the purposes of this report, the Maritimes and Newfoundland regions have been combined and called the Atlantic Region.

In 2000, the Western Region reported 166 shipping accidents. This is a 17 per cent reduction from the five-year average and can be attributed to the decrease in the number of fishing vessel accidents. Five vessels were lost in the region, which represented about one fifth of the five-year average. The number of accidents aboard ship rose to 32, compared with the five-year average of 15. Incidents also increased to 109, more than double the five-year average of 49. These 109 incidents represented 45 per cent of the national total.

In the Central Region, there were 45 shipping accidents in 2000, a 37 per cent reduction from the five-year average. Vessels in the large commercial categories were largely responsible. Six accidents occurred aboard ship, and one vessel was lost. These figures correspond with previous years, but the number of incidents in the region, at 32, showed an increase over the five-year average of 21.

Reported shipping accidents in the Laurentian Region numbered 61, down 19 per cent from the five-year average. The seven accidents aboard ship, three vessels lost and 48 incidents all remained comparable with their respective five-year averages.

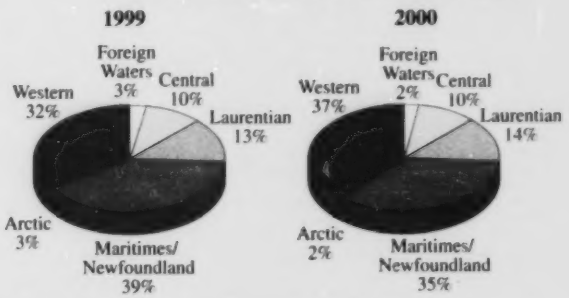
There were 158 reported shipping accidents in the Maritimes/Newfoundland regions, also below the five-year average of 200. The 30 accidents aboard ship denoted a 25 per cent increase, however, above the five-year average. The 17 vessels lost were 39 per cent below the five-year average. Marine incidents at 49, however, showed a 14 per cent increase over the five-year average.

In the Arctic Region, eight shipping accidents and two marine incidents were proportional with the five-year averages. There were two vessels lost in 2000, the first losses since 1994. No accidents aboard ship were reported.

Canadian vessels reported 11 shipping accidents in foreign waters, a slight decline from the five-year average of 15. The one accident aboard ship and three marine incidents reported were comparable with their five-year averages. No vessels were reported lost.

Figures 4-9 compares shipping accidents in 2000 with shipping accidents in 1999, according to Transportation Safety Board regions.

FIGURE 4-9: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999 VERSUS 2000



Source: Transport Canada, based on Transportation Safety Board data

Commercial Shipping Activity

For commercial shipping activity in 2000, the estimated number of trips for Canadian commercial vessels (based on forecast traffic data) increased by nearly one per cent from 1999, whereas the number of these vessels involved

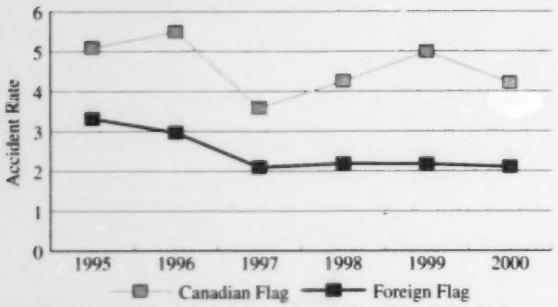
1 A description of the regional boundaries is found in the annual publication entitled "Transportation Safety Board Statistics Summary, Marine Occurrences."

in shipping accidents decreased 15 per cent. The calculated number of foreign flag commercial vessel trips also increased by one per cent, while the number of these vessels involved in accidents remained equivalent.

When comparing the resulting accident rates produced over the same period for Canadian-flag and foreign-flag vessels, it is important to recognize that the numerous tugs and barges operating daily are counted as Canadian commercial vessels, while foreign-flag vessels consist mainly of larger vessels, such as tankers, bulk carriers and container vessels. This incongruity generates the lower accident rate shown for foreign-flag vessels and a seemingly better level of safety.

Figure 4-10 compares the Canadian and foreign-flag commercial vessel accident rates from 1995 to 2000.

FIGURE 4-10: CANADIAN VERSUS FOREIGN FLAG COMMERCIAL VESSEL ACCIDENT RATE, 1995 – 2000



Note: The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

Source: Transport Canada, based on Transportation Safety Board data

Port State Control

Canada is signatory to two Memoranda of Understanding (MOU) on Port State Control: the Paris MOU, which includes 18 European countries and Canada; and the Tokyo MOU, which includes 18 Asia–Pacific countries, including Canada. Under the Paris MOU, members are required to obtain an inspection rate of 25 per cent of vessels entering the members' ports. Under the Tokyo MOU, members are working toward a regional percentage of individual vessels of 75 per cent of vessels entering the region's member ports.

Under these MOU in 2000, preliminary data indicated that there were 1,070 inspections carried out in Canada on vessels from 55 different flags of registry. Of the vessels inspected, 55 per cent were found to have defects. Of these, 18 per cent were serious enough to require the vessels to be detained. The offences under which most detentions were issued included lifesaving equipment, firefighting equipment and structural defects. The majority of vessels inspected were bulk carriers, at 44 per cent, 13 per cent of which were detained. The average age of detained vessels was 17.4 years.

Recreational Boating

According to the Canadian Red Cross National Drowning Report, drownings from recreational boating in Canada in 1998 (the most current year for which data is available) totalled 120. This figure represented a 13 per cent decrease from the previous year and a 15 per cent decrease from the five-year average. The majority of drownings (48 per cent) were the result of capsizing accidents. As in previous years, the largest percentage of recreational boating drownings in 1998 occurred in fishing (43 per cent). The 29 drownings as a result of power boating showed a decline from the 1997 total of 43.

Ontario reported the largest percentage of recreational boating drownings, with 28 per cent, followed by British Columbia with 21 per cent and the Prairies with 20 per cent. For the second consecutive year, there were no recreational boating drownings in the Northwest Territories or the Yukon in 1998.

There were 15 non-drowning boating fatalities in 1998, nearly equivalent to the 16 recorded in 1997. Of these, 60 per cent involved collision/trauma, while the remaining 40 per cent were the result of immersion hypothermia. In 1998, the majority of the fatalities for both these incident types occurred in British Columbia, which reported 6, while Ontario reported 5.

Aviation

This section summarizes reported aviation accidents involving Canadian-registered aircraft and reported incidents involving both Canadian and foreign-registered aircraft occurring in Canada. It does not include occurrences involving ultralights and advanced ultralights.

In 2000, there were 321 accidents involving Canadian-registered aircraft, down six per cent from the 1999 total of 341, and 12 per cent lower than the five-year average of 363. The 2000 total represents the lowest annual number of aviation accidents involving Canadian-registered aircraft in the last 25 years.

Table 4-11 shows the number of accidents and fatal accidents involving Canadian-registered aircraft by type of aircraft from 1995 to 2000.

TABLE 4-11: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1995 – 2000

Type of aircraft	*1995*	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Accidents							
Aeroplanes Involved	315	274	295	316	287	297	259
Airliners	7	4	8	14	6	8	9
Commuters	19	12	14	10	13	14	5
Air Taxi/Aerial Work Aircraft	134	106	120	128	89	115	65
Other Commercial Air Services	0	0	0	0	8	2	0
Private/Corporate/State	155	152	153	164	171	159	180
Helicopters Involved	68	56	56	57	45	56	53
Other Aircraft[1]	12	12	10	17	15	13	12
Total[2]	**390**	**342**	**356**	**386**	**341**	**363**	**321**
Fatal Accidents							
Aeroplanes Involved	44	34	29	24	28	32	25
Airlines	1	1	0	0	1	1	1
Commuters	2	1	0	1	2	1	1
Air Taxi/Aerial Work Aircraft	21	12	11	9	6	12	5
Other Commercial Air Services	0	0	0	0	0	0	0
Private/Corporate/State	20	20	18	14	19	18	18
Helicopters Involved	11	7	8	6	4	7	10
Other Aircraft[1]	0	3	0	2	4	2	1
Total[2]	**52**	**44**	**36**	**31**	**34**	**39**	**36**

1 Includes gliders, balloons and gyrocopters.
2 The number of aircraft involved may not add to the number of accidents, as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

The number of accidents for most aircraft types has declined significantly over this six-year period, most notably in the category of air taxi/aerial work. In 1996, Transport Canada established the Safety of Air Taxi Operations (SATOPS) Task Force to review the safety of air taxi operations. Recommendations made by the Task Force in its 1998 report continue to be implemented, with the objective of increasing the safety of this type of operation.

Private/corporate/state aircraft accounted for 56 per cent of the total number of accidents in 2000, while air taxi/aerial work aircraft operations accounted for 20 per cent. Over the last 10 years, the number of accidents involving private/corporate/state aircraft has been decreasing. That said, accidents involving these types of aircraft have consistently represented approximately one half of all accidents involving Canadian-registered aircraft. These aircraft also accounted for 50 per cent of the total of fatal accidents in 2000.

Airliners are aircraft used by a Canadian air operator in an air transport service or in aerial work involving sightseeing operations with a maximum take-off weight of more than 8,618 kilograms (19,000 pounds) or aircraft for which a Canadian type certificate has been issued authorizing the transport of 20 or more passengers. In 2000, Canadian-registered airliners were involved in nine accidents, up from the previous year's total of six and the 1995 – 1999 average of eight. One of these was a fatal accident. In March 2000, a Douglas DC-3 was landing on an ice strip at Ennadai Lake, Nunavut. The aircraft touched down and then climbed steeply. The gear was seen retracting, and the aircraft then cartwheeled to the ground. Both crew members suffered fatal injuries.

Regional or large commuter aircraft are those used by a Canadian air operator in an air transport service or in aerial work involving sightseeing operations that are multi-engined aircraft with a maximum take-off weight of 8,618 kilograms (19,000 pounds) or less and a seating configuration, excluding pilot seats, of 10 to 19 inclusive. They also include turbo-jet-powered aircraft that have a maximum zero fuel weight of 22,680 kilograms (50,000 pounds) or less and for which a Canadian type certificate has been issued authorizing the transport of not more than 19 passengers.

In 2000, there were five accidents involving regional or large commuter aircraft, down significantly from the previous year's 13 and well below the five-year average of 14. There was one fatal accident involving a Canadian-registered commuter aircraft, resulting in two fatalities. A Grumman G-159 aircraft was on a scheduled courier flight from Moncton, New Brunswick, to Montreal, Quebec, when the crew requested and received an altitude block due to turbulence and icing. The aircraft then exited Canadian airspace without incident. Shortly after entering Boston airspace, the aircraft was observed on radar, descending at approximately 12,000 feet per minute before disappearing from the radar monitor. The wreckage was located in a wooded area near the town of Linneus, Maine. Both crew members were fatally injured.

Most commercial air accidents involve aircraft in the air taxi/aerial work categories. During 2000, there were 65 accidents involving aircraft in these types of operations, down considerably from the 1999 total of 89 and down 43 per cent from the five-year average of 115. Three fatal accidents were reported in 2000 during air taxi operations, resulting in seven fatalities. Two fatal accidents occurred during aerial work operations, resulting in four fatalities.

The overall accident rate in 2000 was 7.5 accidents per 100,000 hours flown, below both the accident rate for 1999 and the five-year average.

The regional breakdown of accidents shows significant fluctuation when comparing this year over last. The Atlantic and the Pacific regions saw the most dramatic increase in accidents in 2000, while the total number of accidents in the Ontario and the Prairie and Northern regions decreased significantly. Accidents in the Atlantic Region rose from 16 in 1999 to 29 in 2000 (an increase of 81 per cent) and were well above the five-year Atlantic

Region average of 19. The Pacific Region reported 68 accidents in 2000 compared with 40 in 1999, a 70 per cent increase that accounts for 21 per cent of the total number of accidents. Accidents in the Quebec Region also increased, from 46 in 1999 to 55 in 2000. Offsetting these increases were the declines in the Ontario Region and the Prairie and Northern Region, both of which experienced a 30 per cent decrease in the number of accidents during 2000, compared with 1999.

Table 4-12 summarizes air accidents by region over the last six years, while Table 4-13 shows the corresponding number of air fatalities by region.

TABLE 4-12: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000

Transport Canada Region	*1995*	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Accidents							
Atlantic	22	18	20	20	16	19	29
Quebec	78	39	60	41	46	53	55
Ontario	74	72	84	105	106	88	74
Prairie and Northern	130	122	108	133	124	123	87
Pacific	72	83	72	70	40	67	68
Outside Canada	14	8	12	17	9	12	8
Total	**390**	**342**	**356**	**386**	**341**	**363**	**321**

Note: The number of aircraft involved may not add to the number of accidents as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

TABLE 4-13: FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000

Transport Canada Region	*1995*	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Fatalities							
Atlantic	6	6	2	5	1	4	7
Quebec	9	12	18	27	9	15	8
Ontario	31	12	8	9	14	15	4
Prairie and Northern	26	13	17	20	17	19	15
Pacific	32	20	22	12	24	22	18
Outside Canada	3	8	10	12	0	7	11
Total	**107**	**71**	**77**	**85**	**65**	**81**	**63**

Note: The number of aircraft involved may not add to the number of accidents as some accidents involve multiple aircraft.

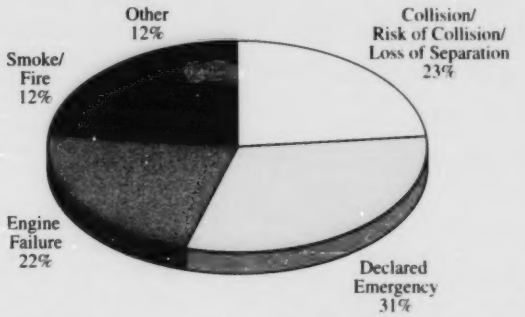
Source: Transport Canada, based on Transportation Safety Board data

In 2000, air fatalities decreased slightly to 63 from 65 in 1999, and remained considerably below the 1995 – 1999 average of 81. For the second year in a row, the Pacific Region recorded the highest number of fatalities, with 18, followed by the Prairie and Northern Region with 17, and Quebec with 8. Along with the marked increase in accidents in the Atlantic Region, the number of fatalities also increased substantially, from one in 1999 to seven in 2000. The number of fatalities dropped by 71 per cent in the Ontario Region, down from 14 in 1999 to four in 2000.

There were 726 reportable incidents involving either a Canadian or foreign-registered aircraft in 2000, an increase of three per cent over 1999 levels and above the 1995–1999 average of 703. In 2000, the most frequent incident types were declared emergencies, with 31 per cent; collision/risk of collision/loss of separation, with 23 per cent; and engine failure, with 22 per cent.

Figure 4-11 illustrates reportable incidents for all aircraft in 2000.

FIGURE 4-11: REPORTABLE INCIDENTS OF ALL AIRCRAFT, 2000



Source: Transport Canada, based on Transportation Safety Board data

INTERNATIONAL COMPARISONS

Table 4-14 compares the percentage of fatal air accidents involving airliner and commuter aircraft in Canada and the United States from 1995 to 2000.

TABLE 4-14: FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1995 – 2000

	1995	*1996*	*1997*	*1998*	*1999*	*1995-1999 Average*	*2000*
Canada							
Accidents	26	17	22	24	19	22	14
Fatal Accidents	3	2	0	1	3	2	2
Fatal Accidents/ Accidents (per cent)	11.5	11.8	0	4.2	15.8	8.7	14.3
US							
Accidents	48	49	66	56	64	55	66
Fatal Accidents	5	6	9	1	6	5	4
Fatal Accidents/ Accidents (per cent)	10.4	12.2	13.6	1.8	9.4	9.5	6.1

Note: Figures pertain to airliner and commuter aircraft only i.e. aircraft with 10 or more seats.

Source: Transport Canada, based on Transportation Safety Board data and US National Transportation Safety Board

Because each country classifies and records its occurrence data differently — due to fundamental differences in the domestic air network and infrastructure of each country — comparing Canadian and US accident data is difficult. Canada's air transportation network is largely linear in nature, extending the entire breadth of the

country. The US network, on the other hand, uses a highly developed hub and spoke network that fans out in all directions. Both countries, however, are members of international panels and working groups whose goals are to establish a common taxonomy and to standardize aviation safety related information. Work from such collaborative efforts should make comparisons and understanding of international safety records much easier.

TRANSPORTATION OF DANGEROUS GOODS

Over 27 million dangerous goods shipments are transported across Canada each year. Most of these include goods that directly influence and improve the lifestyle that Canadians have come to expect and enjoy. The Transportation of Dangerous Goods (TDG) program enhances public safety during the transportation of goods that can threaten public safety when involved in an accidental release.

If they are severe enough to meet the reporting requirements defined in the TDG Regulations, TDG accidents are called "reportable." It is important to note that very few TDG accidents are caused by the dangerous goods themselves. In 2000, there was one reportable TDG accident directly caused by dangerous goods. One injury resulted from this accident.

Table 4-15 compares reportable accidents involving dangerous goods by mode and phase of transport from 1995 to 2000. "In-transit" accidents include those that occurred during actual transport, while "not-in-transit" accidents are those that took place at facilities where the goods were prepared for transport or stored in the course of transport.

TABLE 4-15: REPORTABLE DANGEROUS GOODS ACCIDENTS BY MODE AND PHASE OF TRANSPORT, 1995 – 2000

	In transit				Not in	
Year	*Road*	*Rail*	*Air*	*Marine*[1]	*transit*	*Total*
1995	109	19	3	0	205	336
1996	239	35	9	1	237	521
1997	166	16	6	1	194	383
1998[2]	179	13	4	0	239	435
1999[2]	201	19	3	0	295	518
1995-1999 Average	159	23	3	1	210	395
2000[3]	234	25	3	3	246	511

1 The TDG program does not cover dangerous goods transported in bulk on ships or by pipeline
2 Revised figures.
3 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

In 2000, there were 511 reportable dangerous goods accidents. As has historically been the case, many of these accidents occurred in warehouses while the goods were being handled before loading or after unloading. From 1991 to 2000, more dangerous goods accidents occurred at the handling stage than during transportation.

Table 4-16 summarizes deaths and injuries caused by dangerous goods at reportable accidents that involved dangerous goods. It also shows injuries by level of severity. Two deaths and 42 injuries were caused by dangerous goods in 2000.

TABLE 4-16: DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1995 – 2000

	Deaths due to	*Injuries due to Dangerous Goods*			
Year	*Dangerous Goods*	*Major*	*Moderate*	*Minor*	*Totals*
1995	0	3	58[1]	2	63
1996	1	2	10	16	28
1997[2]	3	15	39	6	60
1998	2	1	36	12	49
1999[2]	2	11	16	12	39
Average	2	6	32	10	48
2000[3]	2	4	23	15	42

1 31 employees were exposed to a carbon disulphide release in Ottawa, Ontario.
2 Revised figures.
3 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

Table 4-17 shows the total number of deaths and injuries that occurred at reportable accidents involving dangerous goods. In most cases, the deaths and injuries were caused by the accident itself (e.g. a collision), not by the goods.

TABLE 4-17: TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1995 – 2000

	Deaths	*Injuries*			
Year	*All causes*	*Major*	*Moderate*	*Minor*	*Totals*
1995	7	27	66	13	106
1996	9	16	37	23	76
1997	15	50	73	11	134[2]
1998[5]	13	38	56	15	109
1999	28[3]	84[4]	143[4]	19	246
Average	14	43	75	16	134
2000[6]	20	44	46	25	115

1 31 employees were exposed to a carbon disulphide release in Ottawa, Ontario.
2 27 passengers injured in one bus-truck collision in Fox Creek, Alberta.
3 7 deaths and 45 injuries were due to a multiple highway vehicle collision in Windsor, Ontario.
4 98 passengers were injured in a train collision with three hopper railway vehicles in Thamesford, Ontario.
5 Revised figures.
6 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

In Tables 4-16 and 4-17, "minor" injuries refer to those that require first-aid treatment, "moderate" injuries involve emergency hospital treatment, and "major" injuries require overnight hospitalization.

TRANSPORTATION — ENERGY AND ENVIRONMENT 5

A sustainable transportation system is a system that meets today's needs for access and economic growth without compromising the ability of future generations to meet their own needs.

This chapter discusses energy demand, fuel prices and the main environmental impacts related to transportation activity. It also examines transportation trends and the environmental pressures these trends are exerting on the sector.

Transport Canada took part in a number of key sustainable development initiatives throughout 2000. This chapter highlights these initiatives, and looks at other transportation-related sustainable development activities taking place across Canada.

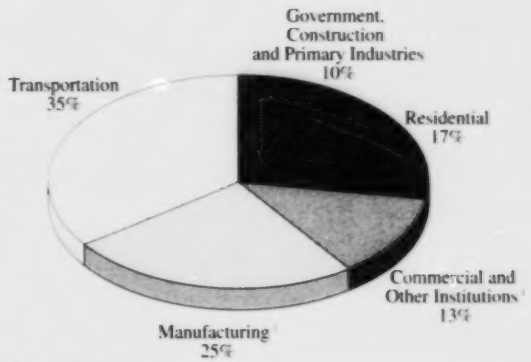
ENERGY

Energy Use

Total energy consumption in Canada was 7,108 petajoules in 1999, a two per cent increase over 1998. The transportation sector remains the single largest energy user in Canada, accounting for 2,484 petajoules, or 35 per cent of total domestic energy use, in 1999. This was a 2.5 per cent increase over 1998. The manufacturing sector is the second largest user, at 25 per cent of total consumption, followed by the residential and commercial sectors, at 17 per cent and 13 per cent, respectively. These manufacturing and commercial figures exclude any energy consumed by these sectors for transportation activities, as estimated by Transport Canada.

As for the lesser sectors, mining accounted for 4.3 per cent of total energy use, agriculture for 3.2 per cent, public administration for 1.8 per cent, construction for 0.7 per cent and forestry for 0.2 per cent. Figure 5-1 shows the distribution of energy use in the Canadian economy in 1999.

FIGURE 5-1: ENERGY USE IN THE CANADIAN ECONOMY, 1999



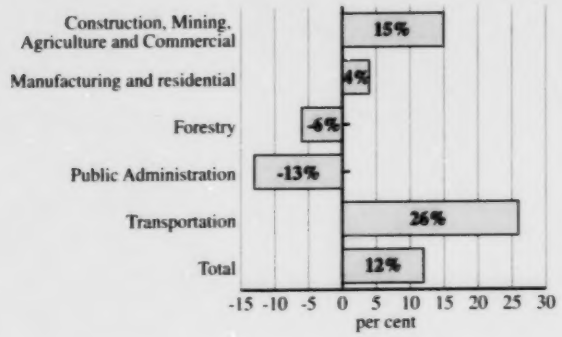
1 Net of transportation activities.

Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Between 1990 and 1999, total energy consumption in Canada increased by 12 per cent overall. During this period, energy demand grew fastest in the transportation sector, by 26 per cent, and rose in the construction, mining, agricultural and commercial sectors by 15 per cent. Over the same period, energy demand increased by only four per cent in the manufacturing and residential sectors, and actually decreased in the forestry and public administration sectors, by six per cent and 13 per cent, respectively. Figure 5-2 shows energy consumption growth by sector over the period 1990 to 1999.

While transportation accounts for 35 per cent of total energy use, it also represents 77 per cent of all sales of refined petroleum products when those sales are measured in terms of energy content (petajoules) rather than volume (litres). Agriculture, manufacturing and the residential sector account for another 14 per cent, while

FIGURE 5-2: GROWTH IN ENERGY USE BY SECTOR, 1990 – 1999

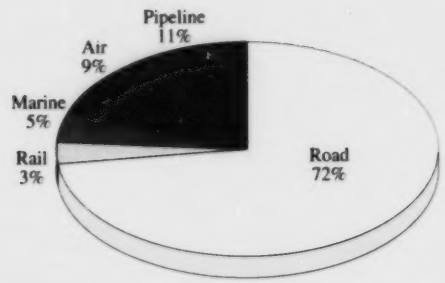


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

mining, forestry, construction and the commercial sectors consumed the remaining nine per cent.

Within the transportation sector, roads account for 72 per cent of total energy consumption, followed by pipelines at 11 per cent, aviation at nine per cent, marine at five per cent and rail at three per cent. Those shares differ somewhat when only petroleum products are considered, since most of the energy consumed by pipelines is from natural gas. In this case, road transport accounts for 81 per cent of transportation petroleum consumption, while pipelines represent only 0.04 per cent. The share of other modes are not significantly affected. Figure 5-3 shows energy use by the different transportation modes in 1999.

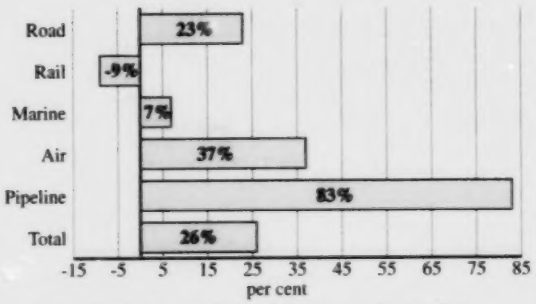
FIGURE 5-3: ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1999



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

The 26 per cent growth in transportation energy consumption between 1990 and 1999 was not distributed evenly by mode. For example, energy use in pipelines increased by 83 per cent, reflecting the tremendous increase in that sector's output (67 per cent). The aviation sector, at 37 per cent, had the second largest increase, reflecting increased activity levels. At the other end of the spectrum, rail fuel consumption declined by nine per cent, mostly because of major gains in energy efficiency. Figure 5-4 compares the different levels of growth in energy consumption by the transportation modes over the period 1990 to 1999.

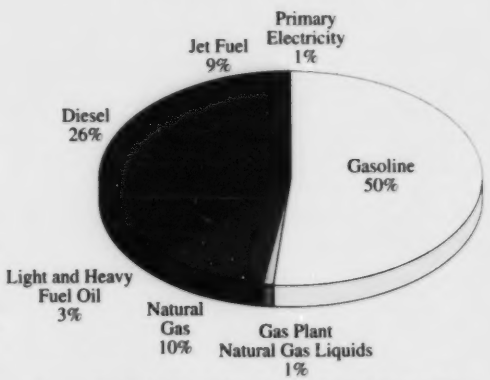
FIGURE 5-4: GROWTH IN ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1990 – 1999



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

As Figure 5-5 shows, half the energy consumption of the transportation sector is in the form of motor and aviation gasoline. Diesel (road, rail and marine) is the second largest type of consumption, at 26 per cent of the total, followed by natural gas and jet fuel at 10 and nine per cent, respectively.

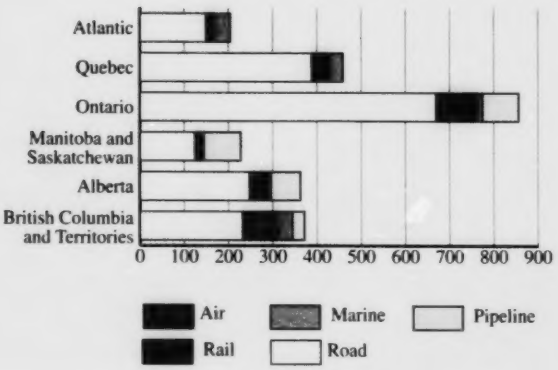
FIGURE 5-5: ENERGY USE IN THE TRANSPORTATION SECTOR BY SOURCE, 1999



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

As Figure 5-6 indicates, Ontario is by far the largest consumer, with 857 petajoules in 1999, or 34 per cent of the Canadian total. Quebec is the second largest consumer, with 459 petajoules (19 per cent), followed by British Columbia with 372 petajoules (15 per cent) and Alberta with 363 petajoules (14.6 per cent).

FIGURE 5-6: TRANSPORTATION ENERGY PURCHASES BY REGION IN PETAJOULES, 1999



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Manitoba and Saskatchewan represented four per cent and five per cent of domestic consumption, respectively, for a combined total of 228 petajoules. The Atlantic Region represented 8.3 per cent of the domestic total, for a combined 205 petajoules of transportation energy. This consumption is divided among Nova Scotia (3.3 per cent), New Brunswick (2.8 per cent), Newfoundland (1.7 per cent) and Prince Edward Island (0.4 per cent). The Northwest Territories accounted for 0.15 per cent of transportation energy demand, followed by the Yukon territory (0.13 per cent) and Nunavut (0.05 per cent).

Figure 5-6 presents transportation energy purchases by Canadian region in 1999.

Finally, preliminary data for 2000 indicate that high fuel prices may have had a dampening impact on consumer demand. Sales of motor gasoline at the pump increased by only 0.05 per cent between 1999 and 2000, compared with an average increase of 1.64 per cent per year between 1990 and 1999. On the other hand, commercial use of fuel, which is not very sensitive to price variations in the short term, is showing more robust increases. Sales of jet fuel increased by 2.25 per cent in 2000 while total sales of diesel (including diesel used outside the transportation sector) rose by 5.6 per cent.

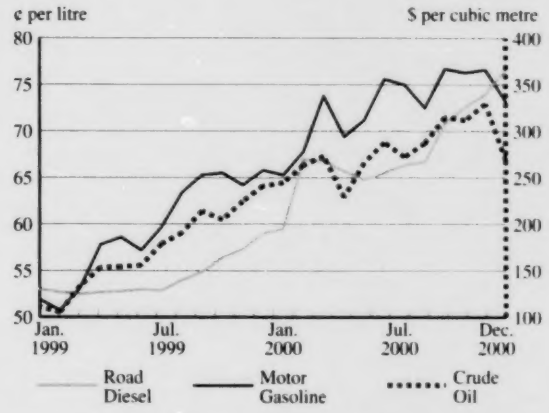
Fuel Prices

In 1999 and 2000, the price of energy increased sharply, affecting all sectors of the economy. It was felt more acutely in energy-intensive industries, including transportation. These increases were not limited to Canada, however, as they were the direct result of repeated increases in the world price of crude oil.

On a monthly basis, the price of crude oil in Canada more than tripled between February 1999 and November 2000, from $105.28 per cubic metre to $329.37. (The price of crude oil in Canada is represented by the price of Canadian Par in Edmonton.) Apart from a brief drop in April 2000, this increase was almost continuous. Over the same period, the retail price of motor gasoline increased by 51 per cent, from 50.7 to 76.6 cents per litre, while the retail price of diesel increased by 40 per cent, from 52.7 to 74.0 cents per litre. The increases in gasoline and diesel prices were lower because some of the components of fuel are not affected by the price of crude oil. In December, prices started to ease off, with crude oil dropping to $268.52 per cubic metre, while gasoline fell to 73.2 cents per litre. Only diesel continued its ascent, averaging 76.2 cents per litre in December 2000. Figure 5-7 is a snapshot of what has happened to fuel prices since the beginning of 1999.

FIGURE 5-7: RETAIL PRICES OF ROAD FUELS VERSUS CRUDE OIL

Average Monthly Prices, January 1999 to December 2000



Source: Statistics Canada, CANSIM, Series E13042, E13125 and E13225.

The price of fuels include federal excise taxes as well as provincial motive fuel taxes whose values, in cents per litre, are preset and do not increase with the price of crude oil. Federal taxes are currently set at 10 cents per litre for motor gasoline, 11 cents for (leaded) aviation gasoline

including diesel. Provincial fuel taxes currently average 13.3 cents per litre for both diesel and gasoline. As long as these nominal rates are kept constant, the price of fuel to Canadian users cannot grow as fast as the price of crude oil. Conversely, reductions in the price of crude oil do not usually bring proportional reductions in the price of transportation fuels.

Other fuel-specific supply and demand factors also come into play in the relative growth of various fuel prices. For example, the steep jump in diesel prices that occurred in early 2000, from 59.5 cents in January to 67.0 cents per litre in February, was due not only to the increased cost of crude oil, but also to a colder than anticipated winter on the East Coast of North America

Given that diesel oil and light fuel oil #2, used for home heating, have exactly the same energy content (38.68 megajoules per litre), both fuels are produced from the same stocks. Thus, an increase in demand for one fuel normally boosts the price of both. A colder than anticipated winter diverts production from diesel to heating oil to meet increased heating demand. This reduces the stock of diesel fuel available and, thus, increases its selling price. Therefore, sudden but temporary increases in diesel prices during winter months are common.

The problem was compounded during the winter of 1999 – 2000 by unusually low stocks at refineries. Producers did not expect the high crude oil prices of 1999 to be carried over in 2000; furthermore, they operated under a mild winter scenario. They had therefore maintained their stocks of fuel produced at high cost at minimum levels to avoid large inventories of pricey fuel in the spring when fuel oil prices fell, as they normally do. Consequently, when shortages in heating oil started to loom, they had to resume production at even higher petroleum prices, which in turn led to still higher diesel and heating oil prices.

Figure 5-8 presents annual average prices for road fuels and the price of road diesel net of federal and provincial sales taxes. This "net" diesel price is presented because most of the diesel sold in Canada for road use is purchased by commercial operators in the trucking, bus and transit industries. And any fuel purchased for commercial purposes, irrespective of the relative size of the buyer's operations, is exempted from sales taxes (federal excise and provincial/territorial motive fuel taxes remain applicable, however). This means that sales taxes are either not paid at all at the point of purchase or, if paid, are later refunded. Larger operators may negotiate discounts for large volume purchases, further reducing the average price paid for diesel.

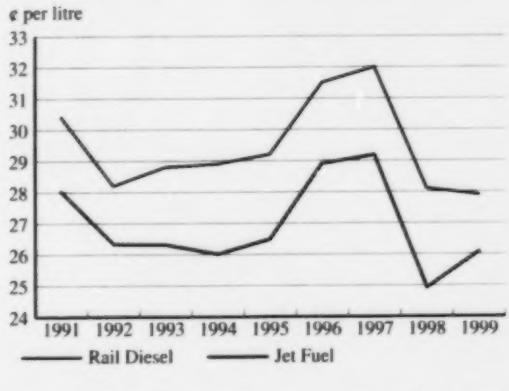
FIGURE 5-8: ANNUAL PRICE OF ROAD GASOLINE AND DIESEL, 1991 – 2000

Source: Statistics Canada, CANSIM, Series E13125 and E13225; Transport Canada

Figure 5-8 also shows that the 1999 price increases were merely reversals of the price declines of 1998. For example, regular gasoline sold, on average, for 59.4 cents per litre in 1999, compared with 59.3 cents per litre in 1997. The retail price of diesel, averaging 54.3 cents per litre in 1999, was still below the 55.8 cents per litre recorded in 1997. As for the cost to commercial users, the 48.9 cents per litre was still 1.4 cents per litre below the average 1997 price. Between 1999 and 2000, the price of retail gasoline increased by 22.6 per cent, while the cost of commercial diesel rose by 26.7 per cent. This cost was six cents per litre, or 8.9 per cent below the posted retail price, reflecting the fact that diesel is less costly to commercial buyers than to private consumers.

Figure 5-9 presents the average price of rail diesel and aviation jet (turbo) fuel for the 1991–1999 period (data for 2000 is not yet available). These are not officially posted

FIGURE 5-9: PRICE OF RAIL DIESEL AND JET FUEL, 1991 – 1999



Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206 and Rail in Canada, Cat. 52-216

prices but, rather, the average cost of fuel paid by airlines and railways.

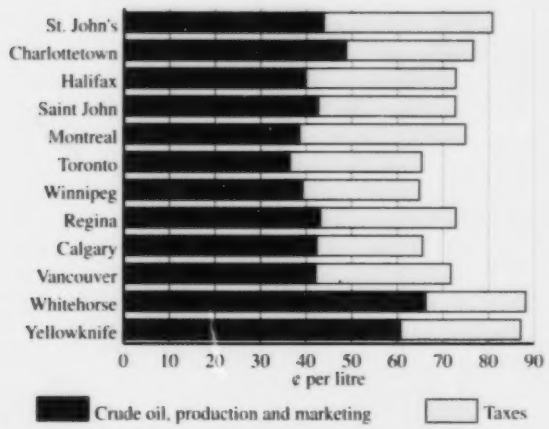
Most fuel prices fell in 1998, but in the case of rail diesel and jet fuel, prices fell by 12 per cent and 15 per cent respectively, compared with 8.6 per cent for motor gasoline and 4.6 per cent for commercial road diesel. The price of jet fuel went up by five per cent in 1999, while the price of rail diesel fell by another one per cent. This additional decline of the price of rail diesel in 1999 may be explained by hedging strategies used by railways, i.e. the pre-contracting of fuel purchases in 1998 when general expectations were for a further decline in oil prices. But hedging allows only for short-term protection against sudden price increases. Prices in 2000 should more accurately reflect higher petroleum costs.

The analysis of fuel prices by mode could not be carried out for marine transportation due to data limitations.

Figure 5-10 presents the retail price of motor gasoline for major cities across Canada for the last week of 2000. The highest prices were in Whitehorse and Yellowknife, at 88.2 and 87.1 cents per litre, respectively. The lowest prices were in Winnipeg and Toronto, at 64.9 and 65.4 cents per litre, respectively. Total taxes were the lowest in Whitehorse (22 cents per litre) and Calgary (23.3 cents per litre). St. John's and Montreal had the highest taxes, at 37.1 and 36.5 cents per litre, respectively. The tax figure for Montreal includes an "urban tax" of 1.5 cents per litre that does not apply to the rest of Quebec. The only other cities to have such a tax are Vancouver, at four cents per litre, and Victoria (not shown), at 2.5 cents per litre.

FIGURE 5-10: RETAIL PRICE OF MOTOR GASOLINE BY CITY

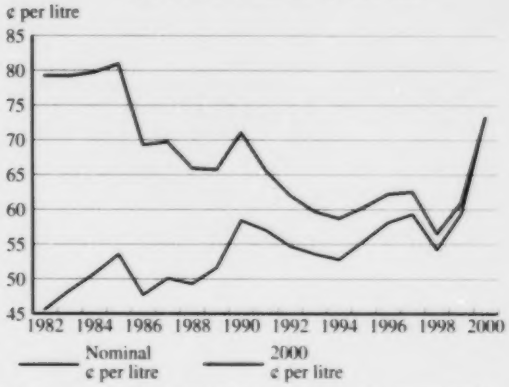
Week of December 28, 2000



Source: M. J. Ervin & Associates

It is important to view these recent increases in an historical perspective. Figure 5-11 shows the evolution of the price of gasoline in both nominal and constant cents per litre. The nominal price went from 45.6 cents per litre in 1982 to an all time high of 73.2 cents per litre in 2000. In constant dollars terms, however, the 1982 price was equivalent to a 2000 value of 79.2 cents per litre. The same can be said for all other transportation fuels.

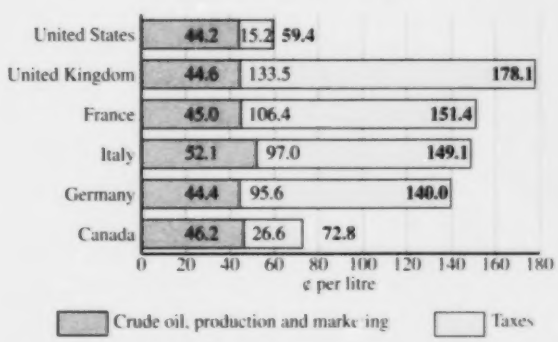
FIGURE 5-11: ANNUAL PRICE OF MOTOR GASOLINE (REGULAR UNLEADED), NOMINAL VERSUS REAL PRICE



Source: Statistics Canada, CANSIM, Series E13125 and P100000; Transport Canada

As Figure 5-12 shows, fuel prices in Canada — as represented by gasoline prices — are much lower than prices in selected European countries but slightly higher than in the United States. While prices before taxes are of the same order of magnitude in the six countries presented, taxes differ strongly between Europe and North America. Fuel and sales taxes are about 75 per cent higher in Canada than in the United States but bear no comparison with taxes levied in the four European countries presented.

FIGURE 5-12: INTERNATIONAL PRICE OF MOTOR GASOLINE, AVERAGE FOR 2000


United States 44.2 15.2 59.4
United Kingdom 44.6 133.5 178.1
France 45.0 106.4 151.4
Italy 52.1 97.0 149.1
Germany 44.4 95.6 140.0
Canada 46.2 26.6 72.8
0 20 40 60 80 100 120 140 160 180
¢ per litre
Crude oil, production and marketing
Taxes

Source: Statistics Canada, CANSIM, Series E13125, E13250 and E13260

TRANSPORTATION'S ENVIRONMENTAL IMPACT

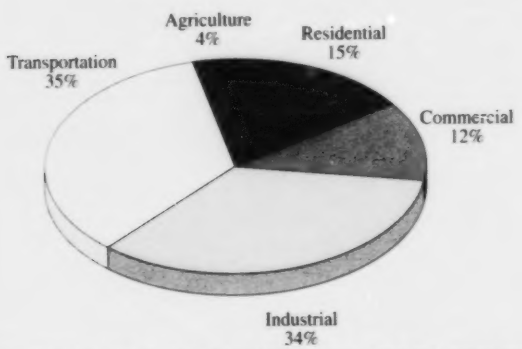
An increase in transportation energy use generated from increases in the level of transportation activity leads to an increase in emissions arising from the combustion of refined petroleum, which makes up almost all transport fuels.

Transportation activity has three major environmental impacts in terms of emissions. First, it is responsible for emissions of active compounds (greenhouse gases) into the troposphere (the lowest layer of the atmosphere), where they trap heat reflected from the surface of the planet. This process elevates global temperatures and thus changes the earth's climate. Second, it results in emissions of compounds that thin the stratospheric ozone layer and thereby cause damaging infiltration of ultraviolet radiation. Third, it results in the production of transport-related organic pollutants that affect biological systems.

Transport's effect on climate change arises mostly from the increase of greenhouse gases. The greenhouse gas of greatest concern is carbon dioxide (CO_2), which is responsible for about two thirds of anthropogenic, or human-induced, global warming.

Among major sources of greenhouse gas emissions in Canada, transportation is the single largest. As Figure 5-13 shows, in 1998, greenhouse gas emissions from transportation energy use were about 157 megatonnes of CO_2 equivalent, or about 34.8 per cent of total greenhouse gas emissions from total secondary energy use.[1]

FIGURE 5-13: TRANSPORTATION GREENHOUSE GASES, 1998



Source: Natural Resources Canada, Efficiency Trends in Canada 1990 to 1998, October 2000

In 1998, road transportation accounted for more than 77 per cent of transportation greenhouse gas emissions, while aviation accounted for 10.2 per cent and marine and rail together less than 10 per cent.

However, environmental impact from transportation activity is not limited to the use of energy. Although transportation provides many economic and social benefits, the movement of people and goods can have other significant environmental consequences. Environmental impacts of transportation include air, water and noise pollution, and the use and alteration of land and other natural resources. A range of transportation activities contributes to these other environmental pressures. These include the construction of infrastructure; operation and maintenance activities, with particular emphasis on winter maintenance; the production, operation, maintenance and disposal of vehicles; and the distribution of fuel.

TRENDS IN TRANSPORT — PRESSURE POINTS

As the population and economy grow, so too does the demand for transportation. Between 1995 and 2000, Canada's economy grew at a rate of about three per cent per year. Population increases, along with a rise in the number of Canadians travelling, are leading to ever-increasing levels of passenger transportation activity, particularly on the road and in the air. Similarly, growth in domestic and international trade and changes in freight activity patterns are leading to significant increases in freight transportation activity. Overall, freight transport activities are expected to increase by 60 per cent between 1990 and 2020, with the greatest share of the growth projected to be handled by the air and trucking sectors.[2]

Under such a scenario, total transportation energy demand in Canada could rise by more than 50 per cent from 1990 to 2020,[3] with major increases in the demand for gasoline, diesel and aviation fuels leading the way. The modes with the largest expected growth — private automobiles, trucking and aviation — have the greatest impact on the environment, primarily due to air emissions and land use.

1 In 1998, transportation emissions accounted for a smaller share (23 per cent) of total greenhouse gas emissions from all sources of energy (primary energy), which include emissions from final end use, non-combustion uses of energy, electricity generation, and oil and gas production.

2 *Canada's Energy Outlook 1996-2020*. Natural Resources Canada, 1997.

3 *Ibid.*

To overcome these challenges, or pressure points, three major issues must be addressed: climate change, air quality, and sustainability in the transportation sector. A sustainable transportation system is a system that meets today's needs for access and economic growth without compromising the ability of future generations to meet their own needs. Under the foreseeable transportation trends, and assuming a growing use of energy in other economic sectors, emissions would continue to increase, contributing to global climate change and the decline of air quality. Such a scenario is not sustainable; it would contribute to changing the average temperatures and rainfall patterns around the world, which in turn would have negative impacts that threaten to create an irreversible impact for future generations.

Transportation is only one component of global climate change. Even if all transportation systems were sustainable, global warming and air quality concerns could continue.

Sustainability is a broader issue than global climate change and air quality. A sustainable transportation system balances short- and long-term needs for the environment, economic efficiency, and safety.

The following sections briefly review what Canada is currently doing to meet the climate change and air quality challenges as well as the broader issue of sustainable transportation.

Canada's Climate Change Agenda

In December 1997, Canada and other developed countries negotiated the Kyoto Protocol to the United Nations Framework Convention on Climate Change. The Protocol commits Canada to reducing its greenhouse gas emissions to six per cent below 1990 levels during the five-year period of 2008 to 2012. If current trends continue, however, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010 and 53 per cent by 2020.

In response to the Kyoto Protocol, and as part of a national process to develop measures to address climate change, Canada established 16 issue tables, including one on transportation. The issue tables brought 450 experts from industry, academia, non-governmental organizations and municipalities, and federal, provincial and territorial governments to the discussion. The process was open, inclusive and comprehensive. It advanced understanding of the issues and of potential solutions. The Transportation Table completed an Options Paper in November 1999, which assessed over 100 potential measures to reduce emissions from transportation.

The two-year national climate change process produced Canada's National Implementation Strategy on Climate Change, released in October 2000. As part of this strategy, Canada's federal, provincial and territorial governments have agreed to develop a series of national business plans outlining concrete actions that they will take in all sectors of the economy to respond to climate change — individually, in partnership and collectively. These business plans will cover a three-year planning horizon and be updated annually. The ministers of Energy and the Environment released the first national business plan for the period 2001 – 2003 in October 2000.

The Government of Canada's contribution to the first national business plan was announced on October 6, 2000, in the Action Plan 2000 on Climate Change. This comprehensive package of measures includes a commitment to spend up to $500 million over the next five years on new measures to reduce greenhouse gas emissions. This builds upon the $625 million announced in the 2000 federal budget for climate-related initiatives.

The five new transportation programs included in the Action Plan 2000 focus on initiatives that can produce cost-effective greenhouse gas reductions in 2010; offer clean air benefits for urban centres; have minimal competitiveness implications; have good public acceptance; support the take-up of new technologies; and improve the efficiency of the transportation system.

The five transportation-related components of the Action Plan 2000 are described in the Action on Transportation box.

ACTION ON TRANSPORTATION

The transportation sector component of the Action Plan 2000 is based on five elements:

- Fuel efficiency: Launch negotiations to achieve new vehicle fuel efficiency targets by 2010.
- New fuels: Increase the supply and use of ethanol produced from biomass such as plant fibre, corn and other grains.
- Fuel-cell vehicles: Develop refuelling infrastructure for fuel-cell vehicles that emit low or zero emissions.
- Freight transportation: Encourage efficiencies and technologies in aviation, rail, marine and trucking industries.
- Urban transportation: Demonstrate best urban transportation technologies and strategies to reduce greenhouse gas emissions.

Source: Action Plan, www.climatechange.gc.ca

Provinces and territories approved the business plan of the National Implementation Strategy in October 2000. Some jurisdictions identified their actions for inclusion in this first integrated plan of committed and proposed federal, provincial and territorial actions. Other jurisdictions, such as Quebec, have adopted the themes and objectives, in whole or in part, and identified their own business or action plans, which are appended to the national plan. Examples of actions approved and under way include British Columbia's SkyTrain expansion, Alberta's further adoption of intelligent transportation systems (ITS) measures, Saskatchewan's short-line Railway Advisory Program, Newfoundland's Fleet Replacement and Maintenance initiative, and Nova Scotia's action to increase awareness of transportation options and encourage behavioural change. Provinces and territories are currently pursuing further work to develop longer-term action and implementation plans that will provide sustained reductions in transportation emissions. Some municipalities also have their own diverse action plans.

Clean Air Initiatives

Another significant sustainable transportation challenge facing Canada is the air pollution generated by transportation activities.

In December 2000, an agreement to significantly reduce smog-causing pollutants was brought into force by the governments of Canada and the United States. The agreement, entitled the Ozone Annex to the 1991 Canada–United States Air Quality Agreement, was signed by the Honourable David Anderson, Canada's Minister of the Environment, and Frank Loy, US Under-Secretary of State for Global Affairs. This agreement commits both governments to significantly reduce the creation of smog causing pollutants — nitrogen oxides (NO_x) and volatile organic compounds (VOCs) — in Ontario and Quebec and the northeastern and mid-western United States.

The Ozone Annex agreement builds on an earlier success in reducing acid rain under the 1991 Canada–United States Air Quality Agreement.

The Ozone Annex commits the United States to a NO_x emission reduction program of 36 per cent year-round by 2010 in the US transboundary region. To achieve this goal, the United States expects to reduce summertime emissions of fossil fuel power production and major industrial sources by more than 70 per cent. Further reductions in NO_x and VOCs are to come from existing US vehicles and fuel quality rules and standards for other sources of VOCs, such as consumer and commercial products.

FEDERAL PARTNERSHIP WITH CANADIAN MUNICIPALITIES

Building more sustainable Canadian communities was brought a step closer to reality following the signing of two agreements on March 31, 2000, between the Federation of Canadian Municipalities (FCM) and the federal government.

The agreements established two multi-million dollar funds to encourage investment in best practice and innovative municipal environmental projects. The creation of the $100-million Green Municipal Investment Fund (GMIF) and the $25-million Green Municipal Enabling Fund (GMEF) was hailed by the FCM as unprecedented recognition of the critical role municipal governments must play in sustainable development.

The Green Municipal Investment Fund is a revolving fund that provides interest-bearing loans as well as loan guarantees for up to 15 per cent of eligible costs and, in exceptional cases, up to 25 per cent. The five-year Green Municipal Enabling Fund will provide grants to municipal governments or their project partners for up to 50 per cent of the eligible costs.

These programs will improve the environmental efficiency and cost-effectiveness of municipal infrastructure by:

- improving the energy efficiency of municipal office buildings and water/wastewater treatment centres;
- supporting renewable energy projects;
- increasing the percentage of waste diverted from landfills; and
- supporting conversion of transit vehicles to operate on more sustainable fuels.

The agreement also commits Canada to aggressive annual caps by 2007 of 39 kilotons of NO_x (as NO_2) emissions from fossil fuel power plants in central and southern Ontario and five kilotons of NO_x in southern Quebec. In addition, Canada is to put in place regulatory standards for vehicles and fuels, aligned with those in the United States. It is estimated that the total NO_x reductions in the Canadian transboundary region will be 44 per cent year-round by 2010.

Both Canada and the United States are to report once every two years on progress in reaching their targets and, in 2004, revisit the agreement to see if further reductions are required. Both countries are to analyse further options to reduce emissions from significant sources such as transportation, manufacturing and electricity. The goal is to implement cost-effective emission reductions through energy efficiency, renewable energy, cleaner fuel and alternative technology. Both countries are also to examine whether air quality issues along the British Columbia–Washington border should be jointly addressed under the Ozone Annex.

Environment Canada initiated a vehicle emissions inspection program in 1986. Since then, the department has organized voluntary vehicle emissions clinics in

conjunction with various regional organizations in both the public and private sector. In 2000, Transport Canada once again partnered with Environment Canada to conduct Vehicle Emission Inspection Clinics across Canada. The primary objective of the clinics is to raise awareness of on-road vehicles' contribution to smog-causing emissions.

At the provincial level, Ontario's Clean Drive Program carries out emissions testing, and repair has become a mandatory requirement for vehicle registration and transfer of ownership. In its first year, the program achieved fuel savings equal to more than 120,000 fill-ups for a mid-size car, resulting in an estimated 6.7 per cent reduction in the emission of smog-causing pollutants.

Sustainable Transportation Strategy

In 1995, the Government of Canada passed legislation requiring each federal department to prepare a sustainable development strategy through the lens of its own mandate. The legislation also established a Commissioner of the Environment and Sustainable Development within the Office of the Auditor General of Canada to monitor and audit the implementation of these strategies.

CANADIAN CITIES: FUNDING SUSTAINABLE TRANSPORTATION

The Metropolitan Transportation Agency was created by the Province of Quebec in 1996. It is a provincial agency that co-ordinates the planning and funding of public transportation in the Montreal region. The agency receives revenue from a 1.5 cent per litre dedicated gasoline tax collected within the region and a vehicle licence surcharge of $30 per vehicle in the region.

In 1999, the Province of Alberta approved an arrangement for funding transportation capital in Calgary and Edmonton, which provides funding of five cents per litre of provincial fuel taxes collected in those regions. Calgary and Edmonton have integrated governance structures that allow them to plan and implement sustainable transportation policies on a comprehensive basis.

In 1999, the Greater Vancouver Regional District and the Province of British Columbia created the Greater Vancouver Transportation Authority (TransLink) to provide transit funding and co-ordination of major roads, transportation demand management, and the motor vehicle emission testing system known locally as AirCare. TransLink has access to a number of transportation-related revenue sources, including fares and a share of the existing provincial fuel tax (initially six cents per litre and rising to 10 cents per litre by 2005). The agency also has the authority to implement vehicle charges, parking taxes and tolls on facilities it finances.

Transport Canada's first strategy was tabled in Parliament in December 1997. The strategy made important progress in a number of areas, such as public education and outreach, climate change and environmental management. Transport Canada's second Sustainable Development Strategy, which will be tabled in Parliament in early 2001, builds on the first strategy. The strategy is Transport Canada's plan for making decisions encompassing sustainability considerations in the transportation sector, in partnership with key stakeholders, and is a step in the journey toward a more sustainable transportation system in Canada. The development of the strategy benefited from the views of a national advisory group and a national stakeholder consultation process that included over 200 stakeholders in eight cities across Canada.

Transport Canada's 2001 – 2003 strategy has 7 challenges and 29 commitments for action and associated targets and performance indicators. The seven challenges are:

1. Improving education and awareness of sustainable transportation
2. Developing tools for better decisions
3. Promoting adoption of sustainable transportation technology
4. Improving environmental management for Transport Canada's operations and lands
5. Reducing air emissions
6. Reducing pollution of water
7. Promoting efficient transportation

To measure the success of the sustainable development strategy, Transport Canada has defined performance measures for its challenges and commitments.

The federal government is also working with municipalities to address sustainability. Municipalities' sustainable transportation actions vary in scope, in part because of the degree of differences in transportation responsibilities delegated to them by provincial governments, but also because of their relative size. Larger municipalities generally have more scope for action than smaller municipalities, especially because of their involvement in public transportation system operations.

The Federation of Canadian Municipalities (FCM), the national voice of municipal governments, provides guidance to municipal decision makers on a range of issues, including transportation and environmental protection.

MILLENNIUM TRANSPORTATION CONFERENCE

On June 11 and 12, 2000, the Honourable David M. Collenette, Minister of Transport, hosted the Millennium Transportation Conference in Toronto. The Conference brought together more than 200 key Canadian transportation decision-makers and prominent public- and private-sector stakeholders to exchange perspectives on the challenges facing Canada's transportation sector and discuss how best to shape a renewed transportation agenda for Canada in the years to come.

The Conference was centred on the overall theme of Meeting the Global Challenge and structured around the following sub-themes:

- Canada and the Global Challenge
- Safety and the Global Challenge
- Sustainability and Globalization
- New Technologies and Globalization
- Public Policy Challenges and Globalization

The FCM is advocating and urging municipal governments to adopt policies that favour public transit over private automobiles; review their transportation policies with a view to shifting to environmentally friendly modes of transportation; and ensure that infrastructure required to support alternative modes of transportation, such as walking and cycling, is adequate.

Many Canadian communities have embraced sustainable development concepts within municipal and regional plans. These plans, developed in consultation with local stakeholders, aim to mitigate environmental impacts associated with urbanization, including transportation. Housing types and residential development that reduce land requirements and facilitate the use of more sustainable modes of transportation are encouraged. Improved long-term land-use planning and modelling exercises are being used to deal with the challenges tied to growth, changing demographics, and lifestyle preferences.

COMMERCIALIZING ENVIRONMENTAL TECHNOLOGY

Vancouver-based Westport Innovations Inc. is commercializing a technology that allows diesel engines to run on clean-burning natural gas.

Westport's High Pressure Direct Injection (HPDI) technology maintains the high efficiency and performance of diesels while drastically reducing particulate matter, smog-causing emissions of nitrogen oxides (NOx) and greenhouse gases. Nitrogen oxides and particulate matter are reduced by approximately 50 per cent and greenhouse gas emissions by up to 25 per cent compared with current diesel engines. HPDI has been tested successfully on transit buses in Canada and California.

In Canada, there are a number of ongoing initiatives aimed at improving fleet performance and encouraging the development of alternative fuels. Some of these initiatives are described in the following sections.

Alternative Fuels

Progress has been made in vehicle and fuel technologies that result in low or zero emissions. Electric vehicles, hybrid electric vehicles, and fuel-cell power systems will all have a role to play in the future of the transportation sector. Fuel-cell technology, such as that being developed by Ballard Power systems of British Columbia, is currently being tested in small residential areas and on transit buses in several North American cities.

Public Awareness and Behavioural Changes

Achieving sustainable transportation will depend largely on increasing public awareness of related issues and changing behaviour. Enhancing public awareness of sustainable transportation issues and potential solutions is a major effort in Canada.

TRANSPORT CANADA FLEET OF ALTERNATIVE FUEL VEHICLES

Transport Canada has a fleet of 300 motor vehicles located mostly in regional offices and Transport Canada Centres (TCCs) across the country. They are used to provide travel in the field as required by Transport Canada's inspectors and officers. In 1999, the Environmental Affairs Directorate, and Materiel and Contracting Services launched a vehicle fleet environmental management program to look at options to optimize the use of Transport Canada's operational fleet. Recently, the automotive industry has focused on a new type of technology that addresses these concerns: hybrid vehicles. Hybrid vehicles can either run on two different types of fuel, or can run on two different types of engines with the same fuel.

Transport Canada has recently purchased a number of hybrid vehicles that fit into both of these categories. As of October 2000, it owned 55 alternative fuel vehicles:

Type of Fuel	*Number of cars*
Electric/Gasoline Hybrid	10
Natural Gas/Gasoline Hybrid	25
E85 (85 per cent Ethanol + 15 per cent Gasoline)	16
Electric (mono-fuel)	2
Propane (mono-fuel)	2
Total	**55**

MOVING ON SUSTAINABLE TRANSPORTATION

The Moving On Sustainable Transportation (MOST) program was launched in September 1999. The program is providing $1 million over three years, to assist non-governmental projects that promise to deliver concrete results in support of Transport Canada's commitment to sustainability. Under the MOST program, Transport Canada committed $400,000 to support 12 sustainable transportation projects in 2000, including:

Visibility, imaging and positioning — The Canadian Urban Transit Association (Ontario) will develop marketing strategies to promote increased ridership and identify barriers to the use of public transit in Canada.

Active and Safe Routes to School — Greenest City (Ontario) will implement a walk-to-school program in school districts in southern Ontario.

Ride the Wind! — The Pembina Institute for Appropriate Development (Alberta) will create partnerships to build support for the use of green power sources for Calgary's light rail transit system.

Reducing greenhouse gas emissions from forestry haul operations — The Forest Engineering Research Institute of Canada (Quebec) will evaluate the performance of a forestry truck equipped with leading-edge technology that will reduce its fuel consumption, and greenhouse gas and other emissions.

The Sustainable Living Bus — The Sierra Club's dynamic mobile learning centre visited communities across Canada. The exhibit has interactive displays on such issues as transportation, recreation, energy and water use, and sustainable shelter. It informs Canadians about ways to adopt a more sustainable lifestyle.

Interactive educational exhibit — The Conseil régional de l'environnement et du développement durable de l'Outaouais (Quebec) organized an educational interactive exhibit on transportation and the environment, focusing on practical alternatives to the automobile.

Active Transportation Education and Outreach Strategy — Go for Green (Ontario) will promote alternative modes of transportation for healthy environments and healthy people through a series of mini-radio messages, television segments and a comprehensive Web site.

Breaking the Barriers: Teens and Cycling — Citizens for Safe Cycling (Ontario) will encourage students at five high schools in the Ottawa-Carleton region to use bicycles as a green mode of transportation.

Climate Change Communiqués — The Canadian Automobile Association will provide its members with information on climate change and sustainable transportation issues.

BikeCartAge: Priming the "Zero Pollution" Pump — The Victoria Centre for Appropriate and Responsible Transportation Society (British Columbia) will initiate a demonstration project at the University of British Columbia to reduce car use by introducing a bike-based delivery system.

Campagne de sensibilisation liée à la problématique du transport durable — The Fondation québécoise en environnement (Quebec) will create and disseminate a public awareness message to promote sustainable transportation alternatives that will be broadcast at movie theatres in Quebec.

Campagne de sensibilisation et de mobilisation des motoneigistes au transport durable — Nature-Action Québec Inc. (Quebec) will raise awareness of over one million snowmobilers in Quebec regarding the impact of their activities on the environment.

Clean Air Day Canada is an example of a federal government program aimed at increasing public awareness. It targets two key environmental priorities, clean air and climate change. It is a grassroots, locally driven program relying on strong partnerships with all sectors of society. In 2000, Clean Air Day focused on sustainable transportation, highlighting initiatives by environmental and health organizations, transit companies, and private sector businesses in over 60 communities all across Canada.

The Climate Change Action Fund (CCAF), established by the Government of Canada in 1998, supports, among other things, initiatives that increase public awareness and understanding of climate change. The objectives are to provide balanced information to Canadians; explore the barriers to action; motivate positive behaviour change; focus on what Canadians can do at home, at work, and on the road; encourage activities in communities, schools, businesses and industries; and leverage resources and promote partnerships. Just under one quarter of the projects is transportation-related.

TRANSPORT CANADA'S AWARENESS PROGRAM

To raise awareness of the benefits of choosing more sustainable transportation modes to commute to work in 2000, Transport Canada launched an internal "Green Commute" program to promote sustainable commuting behaviour among its employees in the National Capital Region.

Noise Pollution

Although noise pollution from transportation activities is a non-residual pollutant, the effect of noise on the quality of life continues to be an issue for Canadians.

A great deal of international effort has been made recently to mitigate the impact of noise caused by aircraft landings and departures at airports. In this regard, the work of the Committee on Aviation Environmental Protection (CAEP) of the International Civil Aviation Organization (ICAO) over the last three years culminated, in the development of a comprehensive series of recommendations to reduce the environmental impact of aircraft noise and engine exhaust emissions.

The conclusions and recommendations of the Committee will help to formulate new policies and the adoption of new standards for aircraft noise reduction. This in turn will support country members and the air transport industry in achieving maximum compatibility between the safe and orderly development of civil aviation and the quality of the environment. On aircraft noise, CAEP endorsed a balanced approach to noise mitigation, consisting of four distinct, complementary elements: reduction of noise at source; improved land-use planning and control; a wider use of noise abatement operational procedures; and operating restrictions.

TRANSPORTATION AND REGIONAL ECONOMIES 6

For Newfoundland and Prince Edward Island, marine is the most important transport mode, compared with trucking for Nova Scotia and New Brunswick. In central Canada, commercial transportation accounts for a relatively low share of provincial GDP, while the opposite is true in western provinces.

Transportation is an important link in the Canadian economy, necessary for moving people and goods within provinces, between provinces, and between provinces and other countries. This chapter demonstrates the importance of transportation to provincial economies through the use of two indicators: the value-added[1] of commercial transportation firms[2] located within provincial boundaries; and the domestic demand[3] for transport-related goods and services purchased by provincial residents. Within this chapter, use of these two indicators is based on data taken from Canada's system of national accounts for 1999, the latest year for which provincial data are available.

This chapter also provides a socio-economic profile of the provinces, which describes some key aspects of the population, geography and economy that influence the relative importance of transportation to overall provincial economies.

The value-added of commercial transportation will be compared with provincial gross domestic product (PGDP), the standard measure of a province's total value of production. Domestic transportation demand will be compared with a province's final domestic demand (PFDD), a measure of the total value of sales in the provincial economy. The two aggregate economic measures are related in that PGDP is equal to PFDD, plus the trade balance.

A SOCIO-ECONOMIC PROFILE OF PROVINCIAL ECONOMIES

The importance of transportation to a provincial economy, and its predominant modes, is primarily determined by the province's geography, its economic structure, and to a lesser extent, its demographics. The factors that influence the supply and demand for transportation within a provincial economy can be better understood by taking a socio-economic look at Canada's provinces.

Geographic factors include a province's geographic area, the relative dispersion of the population, and the existence of natural barriers to transportation, such as mountains or oceans. For example, the territories and Quebec have the largest geographic areas in Canada. The territories, Newfoundland, Manitoba and Saskatchewan have the lowest population densities. The territories and eastern provinces have a higher proportion of rural population than that in the central and western provinces. Areas with the highest elevation are found in the territories, British Columbia and Alberta, while Newfoundland and Prince Edward Island are islands.

Another major geographic factor is location relative to major markets and producing centres. In Canada, the relative proximity of Ontario to major US markets coincides with the lowest share of transportation in all provincial economies, while the relative proximity of

1 Value-added refers to the payments (e.g. wages, profits) made to the principal factors — labour and capital — employed in production throughout the provincial economy. As value-added is determined by the payments to labour and capital, using this concept means that the importance of transport to provincial economies is determined by the location of the workers and capital employed by commercial carriers. Value-added is a measure of the production or supply of transport.

2 Commercial transportation can be defined as industries that transport goods and/or passengers for a fee.

3 Domestic transportation demand measures direct transport-related expenditures by consumers, businesses and governments located within the province. It underestimates the value of commercial transportation to provincial economies because it does not take into account indirect transportation used by industry to produce non-transport-related goods and services (e.g. shoes or apples).

Manitoba and New Brunswick to central Canada coincides with the highest shares of transportation in all provincial economies. Their adjacent and central locations may make these provinces good hub locations for transportation moving into and out of central Canada, thus attracting a higher share of transportation company operations and head offices.

The size and structure of a province's economy also strongly influence the relative importance of transportation, particularly the modal split of transportation activities within the province. There are two major economic characteristics that come into play here: the share of primary commodities in a provincial economy; and the relative importance of trade. As Table 6-1 shows, Alberta, Saskatchewan and the territories have the highest share of primary commodities, while Ontario and Quebec have the lowest share. In terms of trade in 1999, Ontario, New Brunswick and Saskatchewan have the highest levels of exports, while the four eastern provinces have the highest levels of imports.

Relative provincial economic growth also influences transportation industry growth. As Table 6-1 shows, Newfoundland, Nova Scotia and Ontario experienced the fastest growing economies in 1999. This growth in Newfoundland and Nova Scotia resulted from new energy sources, and in Ontario from manufacturing and trade with the United States. The western provinces, particularly Saskatchewan, experienced the slowest growth, due to depressed world commodity prices in 1999 and continuing slow Asian growth.

Finally, a province's demographic make-up can influence the relative importance of different aspects of transportation — notably consumer demand for certain types of transportation, such as vacation-related travel or pick-up trucks. By population, the provinces are uneven in size, with Ontario and Quebec accounting for over 60 per cent of the country's total and thereby also

TABLE 6-1: A SOCIO-ECONOMIC PROFILE OF CANADA'S PROVINCES, 1999

	Newfoundland	*Prince Edward Island*	*Nova Scotia*	*New Brunswick*	*Quebec*	*Ontario*	*Manitoba*	*Saskatchewan*	*Alberta*	*British Columbia*	*Territories*
Demography											
Population (2000)	538,823	138,928	940,996	756,598	7,373,448	11,669,344	1,147,880	1,023,636	2,997,236	4,063,760	100,438
Age 0-15 (per cent)	17.4	19.8	18.2	18.0	17.9	19.5	21.0	21.6	20.9	18.1	28.4
Age 16-24 (per cent)	14.8	14.4	13.5	13.6	13.3	13.1	13.9	14.9	14.8	13.3	16.0
Age 25-44 (per cent)	31	29.3	30.8	31.1	31.1	32	29.7	28.3	33	31.6	33.3
Age 45-64 (per cent)	25.1	23.4	24.2	24.3	24.9	22.9	21.9	20.8	21.3	24	18.2
Age greater than 64 (per cent)	11.6	13.1	13.2	12.9	12.8	12.6	13.5	14.5	10.1	13.0	4.1
Population growth -1996-2000 (per cent)	(0.8)	0.4	0.2	0.1	0.3	1.0	0.2	0.1	1.5	0.9	0.1
Population with post-secondary education - 1996 (per cent)	35.5	38.5	41.8	35.6	38.2	41.2	36.2	35.4	42.2	43	42.4
Geography											
Total area (km^2)	405,212	5,660	55,284	72,908	1,542,056	1,076,395	647,797	651,036	661,848	944,735	3,921,739
Highest elevation (metres)	1,652	142	532	817	1,652	693	832	1,468	3,747	4,663	5,959
Population density (per km^2)	1.33	24.55	17.02	10.38	4.78	10.84	1.77	1.57	4.53	4.30	0.03
Urban Population - 1996 (per cent)	56.9	44.0	54.8	48.8	78.4	83.3	71.8	63.3	79.5	82.1	47.9
Economy											
Provincial Gross Domestic Product (PGDP) (millions of 1992 $)	9,433	2,537	17,924	14,187	158,517	313,510	25,244	23,886	92,110	91,965	3,469
Primary (per cent of PGDP)	11.8	7.3	3.8	5.5	3.0	1.9	5.2	21.7	19.2	6.7	16.1
Manufacturing and Construction (per cent)	12.1	15.5	17.9	18.5	25.9	28.2	18.1	12.1	18.2	16.2	9.0
Government Services (per cent)	9.8	11.9	10.8	9.7	6.6	5.4	8.1	6.1	4.8	5.6	19.4
Other Services (per cent)	66.3	65.3	67.5	66.2	64.5	64.4	68.6	60.1	57.8	71.6	55.5
Exports (per cent)[1]	47.1	51.5	45.1	63.5	53.4	69.3	59.2	62.4	56.9	43.2	47.2
Imports (per cent)	68.4	68.7	67.6	78.2	54.0	58.3	62.6	66.5	53.5	50.7	66.5
Gross Domestic Product (GDP) Growth 1998-1999 (per cent)	6.5	3.3	5.1	4.2	4.6	5.7	2.4	1.4	2.1	2.5	2.3

1 Exports and imports include interprovincial and international trade.

Source: Statistics Canada Web site, Canadian Statistics (www.statcan.ca/english/Pgdb); Statistics Canada, Cat. 93-357: A National Overview — Population and Dwelling Counts; Data Products, 1996 census.

accounting for the majority of transport activity. In general, the provincial populations have a relatively similar age structure. The northern territories (Yukon, Northwest Territories and Nunavut), however, are characterized by a large proportion of people under the age of 15 and a relatively small proportion of people over 65. Over the last five years, population growth has been concentrated in Ontario, Alberta and British Columbia, while Newfoundland has experienced a net decline.

THE VALUE-ADDED OF COMMERCIAL TRANSPORTATION

The relative share of commercial transportation in provincial economies can be examined in terms of its portion of PGDP.

In the eastern provinces, commercial transportation represents a high portion of PGDP because of the relatively large distance from markets in central Canada, the high share of imports, and the moderate levels of primary commodity production. As New Brunswick is the closest eastern province to both central Canada and the United States, it may act as a hub for transport to and from the eastern provinces. New Brunswick, therefore, has a higher share of commercial transport than the other eastern Canadian provinces, and the second highest share, after Manitoba, of all provinces.

The geography of the eastern provinces influences the relative importance of the modes, notably on the two islands of Newfoundland and Prince Edward Island, where marine is the most important transport mode and has the largest share of PGDP of all provinces. Newfoundland also has the highest share of the air mode of all provinces. Truck transport is the most important mode in Nova Scotia and New Brunswick, with trucking in New Brunswick having the largest share of all provinces.

In central Canada (Ontario and Quebec), commercial transportation accounts for relatively low shares of PGDP because of the low share of primary commodities in the economy, the relatively higher population density, and the proximity to large US markets.[4] In both provinces, the most important mode is trucking, followed by public passenger transit.

In the western provinces, commercial transportation accounts for relatively higher levels of PGDP because of the reliance on primary commodity production, the lower population density, and the larger distance from markets relative to central Canada. Manitoba has the highest commercial carrier share of all provinces, possibly due to its location as a hub for western traffic coming into and out of central Canada. British Columbia is similar to Manitoba in that it is a hub for transport to the Pacific Rim countries, which, combined with its difficult geography, also generates a relatively high share of commercial transportation. Saskatchewan also has a relatively high level of commercial transportation, while Alberta has the lowest share of the western provinces.[5] The territories also exhibit a relatively high share of commercial transportation, due to the dispersion of population and the distance from southern Canada.

The main modal characteristic of the western provinces is the higher importance of rail transport. Rail is the most important mode in Saskatchewan, which has the highest share of rail as a percentage of PGDP of all provinces. In Manitoba, Alberta and British Columbia, trucking is the largest mode, followed by rail in Manitoba and Alberta, while marine is second to trucking in British Columbia. The share of air in the territories is higher than for all provinces. Table 6-2 shows the relative share of commercial transportation in provincial economies in 1999.

Table 6-3 illustrates annual growth in commercial transportation in 1999. In the eastern provinces, commercial transportation growth lagged behind PGDP growth in all provinces except New Brunswick. The fastest growing modes were rail and truck freight, while declines were posted by water and air transport in Prince Edward Island and air transport in Nova Scotia.

Commercial transport growth exceeded PGDP growth in Ontario but lagged PGDP growth in Quebec. The highest growth rates were for trucking in Ontario and rail in Quebec, with air transport posting declines in both provinces, along with marine in Ontario.

In all western provinces, commercial transport growth exceeded or equalled PGDP growth, though not in the territories. Truck transport led growth in all provinces, while Manitoba, Saskatchewan, British Columbia and the territories posted declines for air. Public passenger transit was the leading growth mode in the territories.

4 It is also possible that the central provinces are served by a higher proportion of transportation firms located in other countries, thus reducing the relative importance of the value-added of domestic commercial transportation firms located within those provinces.

5 The commercial carrier share of the provincial economies in Alberta principally, but also Saskatchewan, will considerably underestimate the importance of transportation to these provinces, as the principal and most valuable primary commodities produced (oil, natural gas) are generally transported by pipeline. Pipelines are currently not considered transportation by Transport Canada, but will be in 2001 with the advent of the North American Industrial Classification System.

TABLE 6-2: RELATIVE IMPORTANCE OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999

(Per cent)

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
Transportation Industries	**5.1**	**5.2**	**4.4**	**5.9**	**4.0**	**3.1**	**6.1**	**5.1**	**4.6**	**5.2**	**5.6**	**4.0**
Air Transport	1.0	0.3	0.5	0.3	0.5	0.4	0.7	0.2	0.5	0.9	1.7	0.5
Railway Transport	0.2	0.0	0.0	0.8	0.4	0.4	2.1	2.0	1.0	0.9	0.0	0.6
Marine Transport	2.0	2.0	1.3	0.7	0.3	0.1	0.0	0.0	0.0	1.0	0.6	0.3
Truck Transport	1.0	2.0	1.8	3.2	1.5	1.4	2.3	2.1	2.4	1.4	1.8	1.7
Public Passenger Transit	0.2	0.0	0.2	0.1	0.7	0.4	0.3	0.2	0.3	0.4	0.1	0.4
Other transport	0.7	0.8	0.6	0.8	0.6	0.4	0.6	0.6	0.4	0.5	1.3	0.5

Source: Statistics Canada, Transportation Division; Transport Canada estimates

DOMESTIC TRANSPORT-RELATED DEMAND

Domestic transportation demand refers to a broader definition of transport, which includes 1) consumer expenditures on transportation (e.g. automobiles), 2) investment by government and business in transportation equipment and infrastructure, and 3) government expenditures on transport[6] (e.g. highway maintenance). Transportation demand refers to the direct expenditures on transport-related goods and services by consumers, businesses and governments located within the province. Domestic transport demand can be compared with provincial final domestic demand (PFDD), the total value of all goods and services sold within the provincial economies.

Domestic transportation demand can be examined as the relative proportion of provincial final domestic demand. The most interesting observation is the predominance of personal expenditures, which form the largest segment of domestic transportation demand in all provinces and territories. The largest component of personal expenditures in all provinces, except Prince Edward Island and the territories, is new and used transportation equipment. In Prince Edward Island, the largest component is fuel and lubricants, while in the territories it is purchased commercial transportation. The second largest component of transportation demand in all provinces, but not in the territories, is transportation investment. The largest component of investment is in transportation equipment in all provinces, except Prince Edward Island and the territories, where infrastructure investment, such as roads and airport runways, is larger. Government spending on transportation forms the smallest component of total transportation demand in all provinces, but is larger than the investment component in the territories.

In 1999, New Brunswick had the highest level of domestic transportation demand of all provinces, generated by a relatively high level of consumer and business demand for transportation equipment, as well as a high level of infrastructure investment. Ontario and Quebec were next, due largely to high levels of personal expenditures on transportation equipment. The lowest levels were in the territories, Saskatchewan, Newfoundland and Nova Scotia.

Table 6-4 indicates the relative proportion of domestic transportation demand as a portion of provincial final domestic demand in 1999.

TABLE 6-3: ANNUAL GROWTH OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999

(Per cent)

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
Transportation Industries	4.1	0.0	4.7	5.7	4.3	6.2	3.6	1.4	7.5	2.7	1.7	4.9
Air Transport	1.0	(0.9)	(2.2)	0.0	(0.4)	(2.4)	(1.1)	(0.6)	8.1	(3.5)	(1.1)	(0.9)
Railway Transport	10.0	0.0	44.1	9.1	15.4	7.6	1.4	1.0	2.1	3.2	0.0	5.0
Marine Transport	1.4	(1.3)	4.1	4.0	3.5	(0.3)	0.7	0.0	0.0	3.9	1.0	2.8
Truck Transport	10.2	0.0	8.8	7.1	6.5	13.0	8.1	1.4	11.7	5.8	6.8	9.5
Public Passenger Transit	6.7	0.0	0.0	7.1	0.9	0.0	3.8	0.0	2.3	4.5	25.6	1.7
Other Transportation	0.6	0.5	0.5	0.4	1.0	0.7	1.2	0.3	0.5	0.8	(2.6)	0.7
Provincial Gross Domestic Product	6.5	3.3	5.1	4.2	4.6	5.7	2.4	1.4	2.1	2.6	2.3	4.3

Source: Statistics Canada, Transportation Division; Transport Canada estimates

6 Government expenditures consist primarily of highway maintenance and urban transit subsidies; they do not include government investment in roads, which forms the principal component of infrastructure investment.

TABLE 6-4: DOMESTIC TRANSPORT-RELATED DEMAND AS A PERCENTAGE OF PROVINCIAL FINAL DOMESTIC DEMAND, 1999

(Per cent)

	Newfoundland	*Prince Edward Island*	*Nova Scotia*	*New Brunswick*	*Quebec*	*Ontario*	*Manitoba*	*Saskatchewan*	*Alberta*	*British Columbia*	*Territories*	*Canada*
Personal Expenditures on Transportation	**7.2**	**8.4**	**7.7**	**8.5**	**8.6**	**8.7**	**7.1**	**6.6**	**7.1**	**8.1**	**4.2**	**8.2**
New and Used Transportation Equipment	3.0	2.8	3.0	3.8	3.6	3.6	2.7	2.6	3.0	2.6	1.1	3.3
Repair and Maintenance Expenditures	1.0	1.4	1.1	1.3	1.3	1.2	1.2	1.2	1.0	1.1	0.5	1.2
Transportation Fuels and Lubricants	1.8	2.9	2.1	2.3	1.9	1.8	1.7	1.6	1.5	1.7	0.7	1.8
Other Auto Services	0.5	0.6	0.5	0.6	0.9	0.8	0.6	0.5	0.7	0.9	0.6	0.8
Purchased Commercial Transportation	0.8	0.8	0.9	0.5	0.9	1.3	0.9	0.6	0.9	1.7	1.4	1.2
Investment in Transportation	**2.1**	**2.3**	**2.0**	**3.4**	**2.6**	**2.6**	**2.8**	**2.5**	**2.9**	**2.3**	**1.7**	**2.6**
Infrastructure	0.7	1.2	0.5	1.1	0.7	0.6	0.8	1.0	0.9	0.8	1.2	0.7
Machinery and Equipment	1.4	1.1	1.5	2.3	1.9	2.1	2.0	1.5	2.1	1.5	0.5	1.9
Government Spending on Transportation	**1.0**	**1.4**	**0.7**	**1.4**	**1.2**	**1.1**	**1.2**	**1.2**	**1.2**	**1.2**	**2.4**	**1.2**
TOTAL	**10.3**	**12.1**	**10.4**	**13.2**	**12.5**	**12.5**	**11.1**	**10.3**	**11.3**	**11.6**	**8.4**	**12.0**

Source: Personal expenditures: Income and Expenditures Accounts, unpublished provincial data;
Investment: Income and Expenditures accounts, unpublished data, government spending on roads (from government chapter); Statistics Canada, Cat. 63-007, New Motor Vehicle Sales; government spending, derived from government chapter data.

Table 6-5 shows the annual growth in domestic transportation demand in 1999. In Newfoundland, Prince Edward Island, Quebec, Ontario and British Columbia, growth in transportation demand exceeded growth in provincial final domestic demand. The highest growth was in Newfoundland and Ontario, fuelled by increased equipment purchases by consumers and businesses. Declines in growth in transportation demand in Saskatchewan and the territories are consistent with declines in total provincial domestic demand and result primarily from declines in equipment purchases by consumers in Saskatchewan, and from declines in purchased commercial transportation in the territories.

TABLE 6-5: ANNUAL GROWTH IN DOMESTIC TRANSPORT DEMAND, 1999

(Per cent)

	Newfoundland	*Prince Edward Island*	*Nova Scotia*	*New Brunswick*	*Quebec*	*Ontario*	*Manitoba*	*Saskatchewan*	*Alberta*	*British Columbia*	*Territories*	*Canada*
Personal Expenditures on Transportation	**6.0**	**2.8**	**3.6**	**4.6**	**3.4**	**6.5**	**0.0**	**(1.8)**	**0.1**	**2.0**	**(9.2)**	**3.9**
New and Used Transportation Equipment	11.5	3.3	5.4	8.6	5.1	11.8	(1.6)	(3.8)	(0.8)	4.5	3.9	6.8
Repair and Maintenance Expenditures	2.0	3.1	1.1	2.1	4.6	3.7	(0.5)	(1.7)	1.0	(0.4)	(2.3)	2.7
Transportation Fuels and Lubricants	2.4	1.7	3.7	0.6	0.1	3.0	2.0	0.1	(0.2)	(1.3)	(17.0)	1.2
Other Auto Services	3.8	4.6	1.9	2.9	3.1	2.6	0.1	(0.5)	1.4	1.1	(9.0)	2.2
Purchased Commercial Transportation	2.4	3.1	1.8	3.3	2.9	2.7	1.8	0.9	1.8	3.5	(15.6)	2.6
Investment in Transportation	**15.3**	**8.2**	**8.1**	**7.2**	**14.5**	**15.7**	**7.3**	**1.6**	**4.3**	**18.9**	**3.2**	**12.9**
Infrastructure	4.6	3.1	(14.1)	(2.5)	3.0	(10.8)	(2.2)	1.1	9.0	20.1	(2.2)	0.0
Machinery and Equipment	21.9	14.3	19.4	12.4	19.7	26.3	11.9	1.9	2.6	18.3	18.3	18.6
Government Spending on Transportation	**4.4**	**(1.4)**	**(16.6)**	**(6.9)**	**(2.0)**	**(0.9)**	**(3.6)**	**(1.7)**	**4.6**	**12.1**	**(5.3)**	**(2.7)**
TOTAL	**7.6**	**3.2**	**2.7**	**3.9**	**5.0**	**7.6**	**1.3**	**(1.0)**	**1.6**	**6.0**	**(5.7)**	**5.0**
Provincial Final Domestic Demand	7.2	2.8	7.1	7.0	3.8	5.1	3.6	3.1	3.4	3.6	(3.0)	4.4

Source: Personal expenditures: Income and Expenditures Accounts, unpublished provincial data;
Investment: Income and Expenditures accounts, unpublished data, government spending on roads (from government chapter); Statistics Canada, Cat. 63-007, New Motor Vehicle Sales; government spending, derived from government chapter data.

TRANSPORTATION AND EMPLOYMENT 7

Employment in the transport industry continued to increase in 2000. Average weekly earnings were also on the rise while labour relations were relatively stable.

Transportation remains a significant employer in Canada. In 2000, the total workforce in the sector approached 855,000 people with over 18,000 jobs created during the year.

Throughout the period 1996 to 2000, transportation accounted for an average seven per cent of total full-time employment in Canada. In 2000, there were over 12 million full-time employees in Canada. An estimated seven per cent of these employees were involved in activities related to transport.

This chapter covers the full-time employment in the different segments of the transport sector and associated services. Employment is approached from three angles: the number of employees involved in activities directly tied to transportation, the average annual compensation paid to these employees and the number of work stoppages that occurred in the transport sector. In some instances, the figures reported may not fully reflect all employees in the transportation sector or all those occupying transport-related functions. Such an underestimation of transportation's employment is primarily due to either a lack of detailed information allowing a proper allocation, or to the non-existence of official data in certain specific types of transportation occupations.

WORKFORCE

Throughout the period 1996 to 2000, full-time employment in the transportation industry increased by 9.3 per cent in Canada. While employment has been steadily increasing since 1996, the largest increase was recorded in 1999, when employment grew by 3.2 per cent.

In 2000, there were an estimated 853,600 people working in the transport sector, a 2.2 per cent increase over 1999 levels. This constituted the second largest increase recorded since 1997, with more than 18,000 jobs created. Transportation services accounted for 75 per cent of full-time employment in 2000. Employees involved in activities related to transport infrastructure and associated services accounted for 10 and 11 per cent, respectively, while personnel employed by government departments and agencies accounted for the remaining three per cent.

Historically, the trucking industry has been the transportation sector's major employer, and this remained the case in 2000, with trucking accounting for 37.1 per cent of total full-time employment. The air industry ranked second with an estimated 130,600 employees, a 5.8 per cent increase over 1999 figures.

This chapter is divided in six sections. The first four pertain to full-time employment in the different segments of the transport industry. They are:

- Transport services
- Transport infrastructure
- Government services tied to transportation
- Associated services

Average salaries across modes are covered in the fifth section. The last section deals with labour actions.

Table 7-1 shows employment in the transport industry, by category, for the period 1996 to 2000.

TABLE 7-1: TRANSPORTATION EMPLOYMENT BY CATEGORY, 1996 – 2000

(Thousands of workers)

	1996	*1997*	*1998*	*1999*	*2000*[e]
Transport Services					
Air[A]	61.5	70.2	78.2	84.1	90.1
Marine[B]	29.5	26.7	26.1	27.9	30.3
Rail[C]	35.1	34.0	32.5	31.3	31.3
Truck[D]	294.1	298.0	301.4	314.3	316.4
Bus/Urban Transit[E]	59.2	61.0	62.9	64.1	64.9
Local Services[F]	35.5	36.4	37.3	38.2	39.1
Other[G]	64.9	63.7	62.7	64.5	67.6
Total	**579.8**	**590.1**	**601.2**	**624.3**	**639.6**
Transport Infrastructure					
Air[H]	N/A	N/A	2.7	2.8	3.0
Marine[I]	1.7	1.6	1.5	1.5	1.5
Rail[J]	12.9	12.5	12.6	11.8	11.8
Highways[K]	68.8	65.2	66.5	68.0	68.9
Total	**83.4**	**79.3**	**83.3**	**84.1**	**85.2**
Government Services[L]	**32.5**	**28.9**	**28.5**	**28.4**	**28.1**
Associated Services					
Air[M]	29.5	30.5	35.8	36.5	37.5
Marine[N]	5.6	5.7	5.4	5.4	5.4
Other Services[O]	49.9	53.1	54.6	56.2	57.8
Total	**85.0**	**89.3**	**95.8**	**98.1**	**100.7**
Grand Total[P]	**780.6**	**787.7**	**808.8**	**834.9**	**853.6**

Notes: Due to confidential data that has only been included in Totals or the Grand Total, the individual sections do not necessarily add to the sums shown in the table.
e: Transport Canada estimate N/A: not available

Sources:
A 2000 based on 12 months of averaged annual data, Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002
B Statistics Canada, SEPH, 2000 based on 12 months of averaged annual data
C Transport Canada estimates based on Statistics Canada, Rail in Canada, Cat. 52-216
D Statistics Canada, Trucking in Canada, Cat. 53-222, SEPH; Transport Canada for some years
E Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215; Transport Canada
F Transport Canada estimates based on 1991 and 1996 Census data
G Public Transit residual, Other Transportation residual, Pipeline Transportation, SEPH
H Canadian Airport Authorities, Local Airport Authorities, Transport Canada
I St. Lawrence Seaway Management Corporation, Canadian Port Authorities
J Transport Canada estimates based on Statistics Canada, Rail in Canada, Cat. 52-216
K Transport Canada estimates based on 1991 and 1996 Census data
L Government Estimates, Transport Canada estimates for provincial and territorial employment
M Statistics Canada, SEPH - Travel Services; Year 2000 based on 12 months of data
N Pilotage Authorities, BCMEA, MEA
O Insurance Bureau of Canada, Census
P Excludes part-time employees

TRANSPORT SERVICES

RAIL

The number of employees directly involved in the provision of rail transport services accounted for an average 73 per cent of total employees between 1995 and 1999, even though employment declined by 17.4 per cent over the same period. Although reductions of personnel were recorded in all employment categories, cuts were concentrated in jobs related directly to the transportation function.

In 1999, employment figures showed a 3.5 per cent decrease for activities tied to rail transport services compared with 1998 levels. A 3.3 per cent increase was recorded in personnel classified as general. Although this increase put an end to the declining trend shown by this employment category between 1995 and 1999, it was outweighed by the 6.1 and three per cent declines in the transportation and equipment maintenance employment categories, respectively, that same year. Class I carriers were the major contributors to the employment decline in 1999, having reduced their personnel by more than 1,000 people.

Table 7-2 shows the employment in rail transport services, by category, from 1995 to 1999.

TABLE 7-2: EMPLOYMENT BY RAIL TRANSPORT SERVICES, 1995 – 1999

	Total Rail[1]	*Transport Services*	*Class I*	*Class II and III*[3]
1995				
General[2]		6,801	6,236	565
Transportation		19,719	17,676	2,043
Equipment maintenance		11,405	10,243	1,162
Total	**51,754**	**37,925**	**34,155**	**3,770**
1996				
General[2]		6,013	5,477	536
Transportation		18,206	16,225	1,981
Equipment maintenance		10,886	9,757	1,129
Total	**48,038**	**35,105**	**31,459**	**3,646**
1997				
General[2]		5,789	5,288	501
Transportation		17,719	15,684	2,035
Equipment maintenance		10,486	9,352	1,134
Total	**46,537**	**33,994**	**30,324**	**3,670**
1998				
General[2]		5,778	5,298	480
Transportation		16,915	14,708	2,207
Equipment maintenance		11,022	8,774	1,145
Total	**45,061**	**33,715**	**28,780**	**3,832**
1999				
General[2]		5,968	5,470	498
Transportation		15,753	13,728	2,025
Equipment maintenance		9,594	8,485	1,109
Total	**43,144**	**31,315**	**27,683**	**3,532**

1 Total rail employment limited to carrier personnel (does not include incidental rail services).
2 Estimated number of managerial and administrative personnel allocated to transportation.
3 Data may be understated due to exclusion of an estimation of a number of smaller Class III railways and some Class II railways which did not report their employment information.

Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

Figure 7-1 shows the distribution of rail employment in 1999 by category.

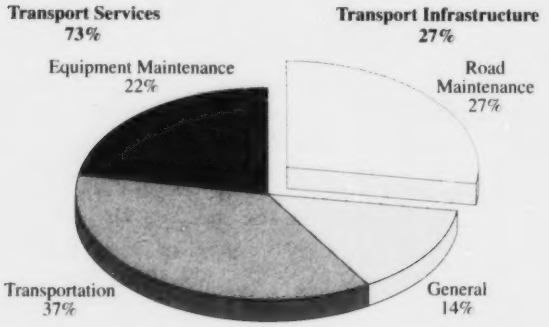
TRUCKING

Medium and Large For-Hire Trucking Firms[1]

In 1999, employment by medium and large for-hire trucking companies had its greatest increase in five years. The number of truck drivers increased by 6.3 per cent,

1 A definition of medium and large for-hire trucking firms is found in Chapter 11, Structure of the Transportation Industry.

FIGURE 7-1: DISTRIBUTION OF RAIL EMPLOYMENT BY CATEGORY, 1999



Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

TABLE 7-3: EMPLOYMENT BY MEDIUM AND LARGE FOR-HIRE TRUCKING FIRMS, 1995 – 1999

	1995	*1996*	*1997*	*1998*	*1999*
Company drivers	50,323	51,833	51,256	52,739	56,037
Other employees[1]	39,963	37,182	40,397	39,685	46,600
Total	**90,286**	**89,015**	**91,653**	**92,424**	**102,637**

Note: Firms include Canadian-domiciled for-hire carriers with annual revenues of $1 million or more.
1 Maintenance, garage, terminal and other employees.

Source: Statistics Canada, Trucking in Canada, Cat. 53-222, and special tabulations

while maintenance, garage, terminal and other personnel rose by 17.6 per cent, leading to an overall 11 per cent increase in employment over 1998. From 1995 to 1999, drivers accounted for a little more than 50 per cent of the personnel at medium and large for-hire trucking firms. In 1999, the proportion of drivers averaged 55 per cent.

Table 7-3 shows the number of people employed by medium and large for-hire trucking firms from 1995 to 1999.

In 1999, there were 102,637 employees working for medium and large for-hire trucking companies. Employees in Ontario accounted for 40 per cent of this figure, while those working in the Prairies and Quebec accounted for 25 and 20 per cent, respectively. Although employment grew in all regions, the largest increases were in Ontario and the Prairies, with employment up by more than 3,700 people.

Table 7-4 shows the regional distribution of personnel working for medium and large for-hire firms in 1998 and 1999.

Small For-Hire Carriers

The number of employees working for small for-hire trucking companies slightly increased in 1998 by four per cent. This increase was entirely driven by a rise

TABLE 7-4: EMPLOYMENT IN THE TRUCKING INDUSTRY, BY REGION

		Canada	*Atlantic Region*	*Quebec*	*Ontario*	*Prairie Provinces*	*British Columbia*
Employment by Medium and Large For-Hire Firms[1]							
1998	Company Drivers	52,739	3,132	11,989	20,793	12,854	3,971
	Other Company Employees	39,685	3,907	7,295	16,626	9,120	2,737
	Total	**92,424**	**7,039**	**19,284**	**37,419**	**21,974**	**6,708**
1999	Company Drivers	56,037	3,399	12,629	21,741	13,311	4,957
	Other Company Employees	46,600	3,954	7,492	19,445	12,418	3,291
	Total	**102,637**	**7,353**	**20,121**	**41,186**	**25,729**	**8,248**
Employment by Small For-Hire Firms[2,5]							
1997	Full-time	25,624	1,911	7,065	5,265	7,415	3,968
	Part-time	9,409	796	1,805	2,429	2,837	1,542
1998	Full-time	27,693	2,322	7,392	4,714	7,768	5,497
	Part-time	8,640	871	2,295	1,610	2,561	1,303
Employment by Private Carriers[4]							
1997	Highway drivers	4,379	133	1,007	2,364	533	342
	Local drivers	8,001	433	2,297	2,897	1,257	1,117
	Other employees	5,212	154	1,596	2,326	469	667
	Total	**17,592**	**720**	**4,900**	**7,587**	**2,259**	**2,126**
1998[5]	Highway drivers	4,381	133	1,007	2,365	533	342
	Local drivers	8,005	433	2,298	2,898	1,258	1,118
	Other employees	5,214	154	1,597	2,327	469	667
	Total	**17,600**	**720**	**4,902**	**7,590**	**2,260**	**2,127**
Employment by Owner-Operators[2,5]							
1997	Full-time	64,242	5,699	12,593	18,597	18,022	9,330
1998	Full-time	63,304	5,485	10,357	21,396	17,259	8,809

1 British Columbia includes employment figures for the territories. Includes Canadian-domiciled for-hire carriers with annual revenues of $1 million or more.
Other Employees: maintenance and garage, terminal and other employees.
2 Territories employment data included in British Columbia.
3 1999 data not available from Statistics Canada.
4 Statistics Canada's *Private Trucking Survey* suspended until further notice.
5 Estimated by Transport Canada.

Source: Statistics Canada, Trucking in Canada, Cat. 53-222 and Transport Canada

in full-time personnel, which accounted for 76 per cent of all workers employed by small for-hire carriers.

Table 7-4 shows the number of full-time and part-time personnel working for small for-hire trucking firms in 1997 and 1998.

Private Carriers

In 1998, there were 17,600 employees working for private carriers. Local drivers accounted for 45 per cent of this total, while other personnel and highway drivers accounted for 30 and 25 per cent, respectively. Firms in Ontario and Quebec employed the majority of workers, accounting for 43 and 28 per cent, respectively.

Table 7-4 shows the regional distribution of employment by private trucking carriers, by category, for 1997 and 1998.

Owner-Operators

In 1998, there were 63,304 full-time employees working for owner-operators. Firms located in Ontario and the Prairies were the major employers of these workers, with 34 and 27 per cent, respectively.

Table 7-4 shows the regional distribution of full-time personnel employed by owner-operators in 1997 and 1998.

Total Trucking Employment

Total employment in the trucking industry increased by five per cent from 1995 to 1998. Owner-operators were the major contributors to this increase, with nearly 6,000 jobs created in this sector throughout the same period. In 1998, employment increased in all sectors, with the largest rise being recorded in the number of delivery drivers. Although a detailed breakdown of personnel was not available by sector for 1999, estimates indicate a 4.3 per cent increase in employment over 1998 levels. In 1999, medium and large for-hire trucking firms reported an 11 per cent increase in employment.

Table 7-5 shows the employment in the trucking industry, by sector, from 1995 to 1999.

TABLE 7-5: TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY, 1995 – 1999

	1995	*1996*	*1997*	*1998*	*1999*
For-Hire					
Medium and Large	90,286	89,015	91,654	92,424	102,637
Small [2]	32,388	35,754	35,033	36,333	N/A
Private [3]	20,242	19,993	17,592	17,600	N/A
Owner-Operators	57,335	61,377	64,242	63,304	N/A
Subtotal	**200,251**	**206,139**	**208,521**	**209,661**	**N/A**
Delivery Drivers [4]	95,940	97,400	98,900	100,409	N/A
Total	**296,191**	**303,539**	**307,421**	**310,070**	**N/A**

1 Includes Canadian-domiciled for-hire carriers with annual operating revenues of $1 million or more.
2 Includes Canadian-domiciled for-hire carriers with annual operating revenues greater than $30,000 and less than $1 million. Includes part-time employees.
3 Includes Canadian-domiciled private carriers with annual operating expenses of $1 million or more. Statistics Canada's Private Trucking Survey suspended until further notice. 1998 data shown is an estimation by Transport Canada based on 1997 data.
4 Based on 1996 Census data; estimated values for 1995, 1997 and 1998.

Source: Statistics Canada, Trucking in Canada, Cat. 53-222, SEPH, Cat. 72-002 and Transport Canada

Bus

Employment in the bus industry increased by five per cent from 1995 to 1999. In 1999, the number of full-time employees grew by less than two per cent. Of the total 64,057 employees working in the bus sector that year, 58 per cent worked for urban transit companies and 31 per cent worked for school bus companies.

Intercity operators have reduced their personnel significantly since the mid-1990s. In 1999, the number of employees totalled 3,127, a 1.8 per cent decrease since 1996. Major cuts took place in the other personnel categories, as well as in the number of drivers in 1998.

In 1999, employment declined by two per cent in the school bus industry. This decrease was driven mainly by a reduction in the number of drivers. Despite this, the

TABLE 7-6: FULL-TIME EMPLOYEES IN THE BUS INDUSTRY, 1995 – 1999

	1995	*1996*	*1997*	*1998*	*1999*
Intercity Operators					
Drivers	1,643	1,419	1,446	1,561	1,527
Mechanics	242	149	145	157	153
Other	1,660	1,571	1,369	1,478	1,446
Total	**3,545**	**3,139**	**2,960**	**3,196**	**3,127**
School Bus Operators					
Drivers	15,007	13,638	16,370	17,676	17,292
Mechanics	820	780	861	930	909
Other	1,663	1,398	1,478	1,596	1,561
Total	**17,490**	**15,816**	**18,709**	**20,202**	**19,762**
Charter Operators [1]					
Drivers	1,720	2,431	1,782	2,290	2,521
Mechanics	214	219	160	274	193
Other	508	740	428	551	536
Total	**2,442**	**3,390**	**2,370**	**3,115**	**3,250**
Shuttle Services [2]					
Drivers			402	462	594
Mechanics			30	16	29
Other			74	73	131
Total	**N/A**	**N/A**	**506**	**551**	**754**
Urban Transit					
General and Administration	4,160	4,114	4,014	3,344	3,805
Transport Operations	25,447	22,807	22,474	22,697	23,231
Vehicle Maintenance	7,888	9,931	9,990	9,826	10,128
Total	**37,494**	**36,852**	**36,478**	**35,867**	**37,164**
Total Full-time Employees	**60,971**	**59,197**	**61,023**	**62,931**	**64,057**

Note: Includes full-time workers of companies with annual revenues greater than $2 million.
1 Data for 1995 and 1996 includes "Shuttle and Sightseeing Operators."
2 Employment data not available for "Scenic and Sightseeing Transportation" by bus prior to 1997.

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215 and special tabulations

school bus sector showed the strongest growth in the bus industry, with more than 4,000 jobs created between 1995 and 1999.

Charter operators and shuttle bus companies reported increases in total full-time personnel for the second year in a row. In 1999, the increase in drivers employed by charter operators outweighed the decline in mechanics and other personnel, leading to an overall increase of 4.3 per cent in employment. In the shuttle bus industry, employment increased in all categories in 1999, with drivers accounting for 65 per cent of the new employees.

Urban transit employment increased by 3.6 per cent in 1999. This increase put an end to the declining trend recorded over the last four years. Transport operations and vehicle maintenance personnel displayed their highest levels since 1996.

Table 7-6 shows the full-time employment figures in the bus industry from 1995 to 1999.

Taxi and Limousine Services

Employment in this segment of the industry cannot be determined precisely on an annual basis. In 2000, the number of employees involved in the provision of taxi and limousine services was estimated at 39,000. This figure was derived by applying the annual growth rate (calculated over the period 1991 to 1996) in the taxi and limousine industry to the 1996 census data.[2] In 1996, workers in Ontario and Quebec accounted for 39 and 24 per cent of total employment, respectively.

Marine

From 1996 to 2000, average annual employment in the marine transport industry, including incidental services, increased by 2.9 per cent. In 2000, the number of people working in this sector totalled 30,266, the highest level of employment recorded over the last five years and an 8.4 per cent increase over 1999 levels.

In 2000, average annual employment, excluding services incidental to marine transport, increased by 11 per cent. Although employment rose in all regions, three provinces accounted for 85 per cent of the total increase: British Columbia, Ontario and Quebec. The number of workers in these provinces increased by more than 500 in 2000. British Columbia and the Atlantic Region had the highest employment levels between 1996 and 2000, accounting for 43 and 25 per cent of total employment, respectively.

Table 7-7 shows average annual employment in the marine transport industry from 1996 to 2000.

TABLE 7-7: AVERAGE ANNUAL EMPLOYMENT IN THE MARINE TRANSPORT INDUSTRY, 1996 – 2000

	1996	1997	1998	1999	2000
Atlantic Region[1]	3,482	3,461	3,945	4,241	4,536
Quebec	3,068	2,516	2,269	2,463	2,921
Ontario	2,883	2,361	2,463	2,707	3,215
British Columbia	8,073	7,554	6,669	6,929	7,441
Other Regions	276	248	168	150	161
Canada	17,783	16,140	15,514	16,490	18,274
Total[2]	**29,516**	**26,726**	**26,097**	**27,911**	**30,266**

Note: Figures for period 1996 through 2000 are based on 12 months annual weighted data.
1 1999 and 2000 figures exclude marine employees not engaged in marine incidental services who are located in the provinces of Newfoundland and Prince Edward Island.
2 Including incidental services.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002

Ferry Operators

Total employment figures for Canadian ferry operators declined by 17 per cent between 1996 and 1999. This decrease was mainly due to a 50 per cent drop in the number of employees working in the Atlantic Region after the completion of the Confederation Bridge to Prince Edward Island in 1997. The level of employment has remained relatively stable since then. Personnel employed by ferry operators in British Columbia dropped slightly in 1998 and 1999 returning to close to 1996 employment levels.

Table 7-8 shows the employment figures for Canadian ferry operators, by region between 1995 and 1999.

TABLE 7-8: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1995 – 1999

	1995	*1996*	*1997*	*1998*	*1999*
Atlantic[1]	3,310	3,310	1,670	1,670	1,670
Quebec	610/740	597	710	710	710
Ontario	450	327	344	335	335
British Columbia	4,605	4,785	4,872	4,822	4,792
Prairies and Territories[2]	57	57	57	57	65
Total	**8,395/8,495**[3]	**9,076**	**7,653**	**7,594**	**7,572**

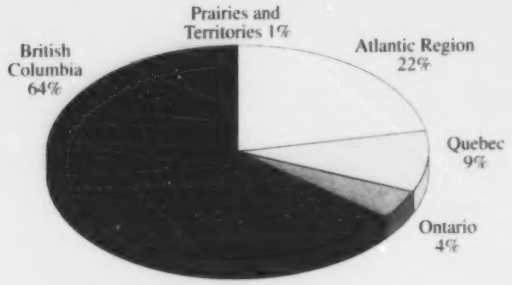
Note: Data limited to members of the Canadian Ferry Operators Association. Figures are likely to underestimate real employment as data were not available for all ferry operators.
1 Atlantic: Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland.
2 Prairies and Territories: Manitoba and the Northwest Territories.
3 Split numbers are due to seasonal fluctuations.

Source: Canadian Ferry Operators Association (CFOA)

Figure 7-2 shows the regional distribution of employment by Canadian ferry operators in 1999.

2 In 1996, there were 35,490 taxi and limousine drivers according to census data.

FIGURE 7-2: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1999



Source: Canadian Ferry Operators Association (CFOA)

AIR

Employment in the air industry increased by 28.5 per cent over the last five years. In the mid-1990s, more than 75 per cent of all people working in the air sector were employed by Levels I–III air carriers. This proportion has been steadily decreasing since 1996, averaging 64 per cent in 1999. Nevertheless, increases in personnel were recorded in all air employment categories from 1995 to 1999.

In 1999, employment by Levels I–III air carriers increased by less than two per cent. Pilots and co-pilots accounted for 65 per cent of this increase, while management and administrative personnel accounted for 26 per cent. Employment by Level IV carriers declined by 8.6 per cent in 1999, the largest decline recorded over the last five years.

TABLE 7-9: EMPLOYMENT IN THE AIR INDUSTRY, 1995 – 1999

	1995	*1996*	*1997*	*1998*	*1999P*
Levels I-III[1]					
Pilots and Co-pilots	6,295	6,478	6,549	7,377	7,834
Other Flight Personnel	8,010	8,593	9,126	9,982	10,113
Management and Administration	3,590	3,523	3,631	4,013	4,227
Other Carrier Personnel	28,408	28,411	29,200	31,650	31,631
Total	**46,303**	**47,005**	**48,506**	**53,022**	**53,805**
Level IV Total[2]	**4,077**	**4,537**	**4,361**	**4,646**	**4,226**
Levels I-IV Total	**50,380**	**51,542**	**52,867**	**57,668**	**58,031**
Grand Total, Including Incidental Services[3]	**60,870**	**61,475**	**70,232**	**78,223**	**84,058**

P = Preliminary data.

1 Canadian air carriers that in each of the two calendar years immediately preceding the report year, transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

2 Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of $500,000 or more for air services for which the air carrier held a licence. (http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html)

3 Incidental services: jobs that are associated with the air industry but are not defined by Statistics Canada.

Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206 and Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002

Table 7-9 shows the employment in the air industry from 1995 to 1999.

OTHER

There are a number of employees working for companies providing public passenger transit services or other services incidental to the bus transport sector that are not captured by Statistics Canada's survey on the bus industry. These employees are reported under the "other" public passenger transit employment figures in Table 7-10. From 1996 to 2000, employment in this category increased by 12 per cent despite a slight decline in 1997.

In 2000, there were 40,350 people employed in "other transportation" positions, the highest employment level recorded in this category since 1996.

While personnel employed in the pipeline transportation sector declined by four per cent over the last five years, it grew by five per cent in 2000.

Table 7-10 shows the employment in other directly transport-related occupations from 1996 to 2000.

TABLE 7-10: OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT, 1996 – 2000

	1996	*1997*	*1998*	*1999*	*2000*
Other Public Passenger Transit	18,321	17,172	17,465	19,115	20,558
Other Transportation	39,562	39,514	38,687	39,005	40,350
Pipeline Transportation	7,005	7,027	6,590	6,419	6,740
Total	**64,888**	**63,713**	**62,742**	**64,539**	**67,648**

1 2000 based on 12 months of averaged annual data.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

DATA GAPS IN TRANSPORTATION SERVICES

The number of employees involved in the provision of transport services is likely to be underestimated by the figures reported in this section of the report due to the absence of detailed information or the inexistence of the data in certain segments of the industry. For example, employment figures for Levels V and VI air carriers, general aviation or private air carriers were not available. In the marine sector, the number of employees associated with shipping conferences operating in Canada is unknown. In addition, it was not possible to determine precisely the personnel working for taxi and limousine companies since actual figures will not be available until the 2001 census is conducted. Many other workers employed by foreign carriers operating to and/or from Canada are not captured in the employment figures.

TRANSPORT INFRASTRUCTURE

This section discusses employment at airports, harbours, ports and other transport facilities. It also covers personnel specifically devoted to the construction and maintenance of air, marine, rail and road infrastructure.

RAIL

Throughout the period 1995 to 1999, the total number of employees involved in activities related to rail infrastructure services declined by 14.7 per cent. In 1999, the decrease in employment figures averaged seven per cent, the largest decrease recorded in the last three years. The reduction in the number of Class I personnel was the major contributor to this decline, with a seven per cent drop. Also in 1999, Class II and III rail carriers underwent a 7.6 per cent decline in employment. Employees devoted to the construction and maintenance of tracks, structures and signal installations accounted for an average 27 per cent of total employees over the last five years in the rail industry and for Class I carriers. This ratio was 32 per cent for Class II and III rail carriers.

Table 7-11 gives a breakdown of the number of employees in rail infrastructure services from 1995 to 1999.

TABLE 7-11: EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES, 1995 – 1999

	Total Rail	*Infrastructure Services*	*Class I*	*Class II and III*
1995				
General[2]		2,274	1,999	275
Road Maintenance		11,555	9,999	1,556
Total	**51,754**	**13,829**	**11,998**	**1,831**
1996				
General[2]		2,041	1,782	259
Road Maintenance		10,892	9,392	1,500
Total	**48,038**	**12,933**	**11,174**	**1,759**
1997				
General[2]		1,965	1,726	239
Road Maintenance		10,578	9,064	1,514
Total	**46,537**	**12,543**	**10,790**	**1,753**
1998				
General[2]		2,054	1,825	229
Road Maintenance		10,634	9,001	1,633
Total	**45,061**	**12,688**	**10,826**	**1,862**
1999				
General[2]		2,052	1,816	236
Road Maintenance		9,743	8,260	1,484
Total	**43,144**	**11,795**	**10,076**	**1,719**

1 Total rail employment limited to carrier personnel, does not include incidental services.
2 Estimated number of management and administrative personnel allocated to rail infrastructure.

Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

HIGHWAYS

Employment in the construction and the maintenance of Canadian highways is strongly influenced by economic and seasonal considerations. Employment cannot be determined precisely on an annual basis for highway departments at the federal, provincial or municipal levels.

In 2000, an estimated 68,900 people were employed in highway and heavy construction. This figure was derived by applying the growth rate of government expenditures on roads calculated over the 1996 – 2000 period to the 1996 census data.[3] This estimate is likely to overstate the actual number of people directly involved in the construction and maintenance of highways in Canada, since the proportion of employees performing heavy construction could not be deducted.

MARINE

Canadian Port Authorities

In 2000, the total number of employees working for Canadian Port Authorities decreased by 7.2 per cent compared with the previous year's figures. The number of personnel declined in all employment categories, but the overall decrease was driven mainly by a reduction in the number of part-time employees.

Table 7-12 shows the employment figures for Canadian Port Authorities, by category, for the period 1998 to 2000.

TABLE 7-12: EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 – 2000

	Year	*Management*	*Administration*	*Other*	*Total*
Total Employees	**1998**	219	315	647	1,181
Full-time		209	265	405	879
Part-time		5	39	202	246
Contract		5	11	40	56
Total Employees	**1999**	215	346	694	1,255
Full-time		208	303	411	922
Part-time		1	34	214	249
Contract		6	9	69	84
Total Employees	**2000**	214	332	618	1,164
Full-time		200	309	418	927
Part-time		10	18	83	111
Contract		4	4	118	127

Note : Totals do not equal sum of parts, as some ports did not provide detailed breakouts.

St. Lawrence Seaway Management Corporation

Throughout the 1996 – 1998 period, total employment reported by the St. Lawrence Seaway Authority (SLSA) declined by 12 per cent, a decrease driven mainly by a reduction in the personnel working in operations. In

3 In 1996, 68,820 people were working under the industry classification "Highway and Heavy Construction" according to census data.

December 1998, the SLSA became the St. Lawrence Seaway Management Corporation (SLSMC), and in 1999, employment decreased by a further eight per cent, again due mainly to a reduction in the number of operations employees. Preliminary data for the first eight months of 2000 indicated no variation in the number of full-time employees working for the SLSMC, although the distribution of these employees among the different employment categories changed slightly.

Table 7-13 shows the employment figures of the St. Lawrence Seaway Authority and the St. Lawrence Seaway Management Corporation from 1996 to 2000.

TABLE 7-13: EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1996 – 2000

	1996	*1997*	*1998*[1]	*1999*[2]	*2000*[3]
Management	13	12	15	11	13
Administration	86	84	70	65	66
Operations	611	591	540	499	496
Total	**710**	**687**	**625**	**575**	**575**
Temporary	34	49	33	39	46

1 As at December 31, 1998, St. Lawrence Seaway Authority.
2 As at December, 1999, the St. Lawrence Seaway Management Corporation.
3 As at August, 2000, the St. Lawrence Seaway Management Corporation.

Source: St. Lawrence Seaway Management Corporation

AIR

In 2000, there were 2,972 employees working for airports in the National Airports System (NAS), 4.7 per cent more than in 1999. Canadian Airport Authorities (CAA) and Local Airport Authorities (LAA) were the main employers of these people. Transport Canada employees in transit, which accounted for less than four per cent of this number, declined by 63 per cent. The largest increases in personnel were recorded in central and eastern Canada. The employment figures reported by CAAs and LAAs in the central region were 10 per cent higher than last year, while the employment in the Atlantic Region more than doubled.

Table 7-14 shows the number of airport employees in Canada's National Airports System in 2000.

TABLE 7-14: EMPLOYMENT AT NAS AIRPORTS, 2000

	CAA/LAA	*Transport Canada Employees In-transit to NAS Airports*	*Total*
Atlantic[1]	300	84	384
Central[2]	1,660	0	1,660
Western[3]	861	26	887
Territories[4]	41	0	41
Total	**2,862**	**110**	**2,972**

1 Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick.
2 Central: Ontario, Quebec.
3 Western: Manitoba, Saskatchewan, Alberta, British Columbia.
4 Territories: Yukon, Nunavut, Northwest Territories.

Source: CAAs, LAAs, Transport Canada

DATA GAPS IN TRANSPORTATION INFRASTRUCTURE

The actual number of employees working at transport facilities or devoted to the construction and maintenance of Canadian infrastructure is not accurately reflected in this section. Many employees have not been captured due to the lack of detailed information or the non-existence of data. For example, the number of employees responsible for the construction and maintenance of highways in Canada could not be identified precisely because the percentage of workers involved in heavy construction is unknown. The marine employment figures do not include personnel working in private firms and terminals, employed by non-port authorities, performing dredging, construction and maintenance of piers and berths, or occupying other infrastructure-related functions. Finally, airport employment excludes the employees of airports or facilities not belonging to the National Airports System.

GOVERNMENT SERVICES TIED TO TRANSPORTATION

FEDERAL GOVERNMENT SERVICES

In 2000/01, the number of full-time employees the federal government planned to assign to transportation declined by three per cent to 8,488. These workers are primarily employed at Transport Canada and the Canadian Coast Guard. However, the figures reported do not accurately reflect the number of employees occupying transport-related functions throughout federal government departments and agencies. This is because employment figures are not available at a detailed enough level to allow these transport activities to be clearly identified. Agriculture and Agri-Food Canada, Canada Customs and Revenue Agency, Heritage Canada, Citizenship and Immigration Canada, the National Capital Commission and the Royal Canadian Mounted Police are

TABLE 7-15: PLANNED FULL-TIME EQUIVALENTS FEDERAL DEPARTMENTS AND AGENCIES

	1996/97	*1997/98*	*1998/99*	*1999/00*	*2000/01*
Transport Canada	12,257	4,840	4,480	4,204	4,071
Canadian Coast Guard[1]		4,007	3,945	4,086	3,928
Transportation Safety Board	255	223	229	234	230
Canadian Transportation Agency	356	260	249	249	251
Civil Aviation Tribunal	8	8	8	8	8
Total	**12,876**	**9,338**	**8,911**	**8,781**	**8,488**

1 Included with Transport Canada until 1997/98.

Source: 1995-2000 Estimates, Federal Government Main Estimates

among the federal departments and agencies with employees performing activities tied to transportation who are not captured in these employment figures.

Table 7-15 shows the planned full-time equivalents devoted directly to transportation in federal departments and agencies over the past five years.

Provincial and Territorial Government Services

From 1996 to 2000, the estimated number of employees involved in the provision of transport services has been steadily declining in provincial and territorial governments. Estimates of governmental services tied to transportation are reported at the beginning of this chapter. However, the employment figures shown in the summary Table 7-1 are likely to underestimate the number of employees provinces and territories actually devote to transport activities, as these figures do not capture employees providing highway patrol services and policing, safety or regulatory services, as well as those performing truck inspections.

Municipal Government Services

The number of municipal employees responsible for the construction and maintenance of roads, snow removal, vehicle parking lots, policing or occupying other transport-related functions has not been reported, since it was not possible to develop a comprehensive estimate of these personnel figures on a national scale.

Associated Services

There is a wide variety of services incidental to air, marine and surface transportation. Associated services related to "operations" include food catering, equipment maintenance, insurance, marine bunkering and towing, and navigation support (traffic control, marine pilotage). Services related to "sales" include employees working for travel agencies, tour operators and wholesalers, intermodal marketing companies, freight brokers and forwarders, to list a few. Finally, there are a large number of people providing administrative support or other related functions, and many modal associations and unions in air, marine and surface transport with administrative and other employees. The estimate of total employment in the transport sector would not be accurate if the personnel involved in providing these services were not included.

In this section, employment figures for a certain number of these associated services are presented: employment by marine pilotage authorities and maritime employers associations, full-time personnel employed by travel agencies, tour operators and wholesalers and NAV Canada personnel levels. The content of this section is limited by the lack of availability of further information on the number of employees occupying functions in other associated services.

Marine

Pilotage Authorities

In 2000, the number of employees working for pilotage authorities increased slightly in all regions. The Atlantic and Laurentian pilotage authorities accounted for most of the three per cent increase. The Laurentian and Pacific regions have the most pilotage employees, with 40 and 30 per cent, respectively. From 1996 to 2000, pilots accounted for 75 per cent of the pilotage authorities' employment figures.

Table 7-16 shows the number of people employed by Canada's four pilotage authorities, by category, for the period 1996 to 2000.

TABLE 7-16: MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1996 – 2000

	1996	*1997*	*1998*	*1999*	*2000*
Pilotage Authorities					
Great Lakes Pilotage	75	82	83	85	88
Atlantic Pilotage	73	72	72	72	78
Laurentian Pilotage	214	216	224	228	233
Pacific Pilotage	167	167	167	167	168
Canada					
Administration	44.5	44	42	44	43.5
Pilots	396	403	413	414	429
Other[1]	89	90	91	95	95
Total	**529**	**537**	**546**	**553**	**567**
Employers Associations (EA)					
Maritime EA[2]	1,204	1,285	1,279	1,253	1,195
British Columbia Maritime EA[3]	3,857	3,919	3,604	3,576	3,656

1 Other includes dispatch, pilot boat and other unspecified services.
2 Includes ports of Montreal, Trois-Rivières, Bécancour, Toronto and Hamilton.
3 Includes ports of Vancouver, New Westminster, Prince Rupert, Chemainus, Port Alberni, Victoria, Port Simpson, Stewart and a category "Others."

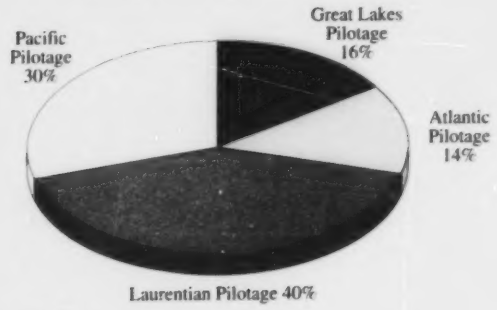
Source: Canadian Pilotage Authorities, MEA, BCMEA

Figure 7-3 shows the distribution of employment among the four Canadian pilotage authorities in 2000.

Maritime Employers Association

In 2000, the British Columbia Maritime Employers Association (BCMEA) showed a 2.2 per cent increase in its employment figures. Although the largest increase since 1997, it did not outweigh the staff reductions reported in the last two years. In 2000, the association showed a 5.2 per cent drop in its employment levels compared with 1996.

FIGURE 7-3: MARINE PILOTAGE EMPLOYMENT DISTRIBUTION, 2000



Source: Canadian Pilotage Authorities

In eastern Canada, the Maritime Employers Association (MEA) recorded a decrease in employees for the third consecutive year. The 4.6 per cent decline in the 2000 employment figures, in conjunction with the drops reported in 1998 and 1999, entirely cancelled out the 1997 increase in personnel, bringing the number of employees back to close to 1996 levels.

Table 7-16 shows the employment levels of the maritime employers associations for the period 1996 to 2000.

AIR

Travel Agencies, Tour Operators and Tour Wholesalers

There were 31,805 employees working for travel agencies, tour operators and tour wholesalers in 2000, a two per cent increase over 1999. Two thirds of these people were employed in Ontario and Quebec, with 42 and 25 per cent, respectively. Employees in western Canada accounted for 28 per cent of the total, nearly distributed evenly between the Prairies and British Columbia. Quebec had the highest increase in employment between 1996 and 2000, with nearly 20 per cent.

TABLE 7-17: EMPLOYMENT BY TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS, 1996 – 2000

	1996	*1997*	*1998*	*1999*	*2000*[1]
Maritimes	646	856	842	869	674
Quebec	6,656	8,343	7,922	8,102	7,892
Ontario	12,712	11,938	12,018	12,527	13,478
Prairies	4,746	4,395	4,508	4,569	4,706
British Columbia	4,541	4,674	4,942	4,795	4,346
Canada[2]	**29,466**	**30,487**	**30,488**	**31,179**	**31,805**

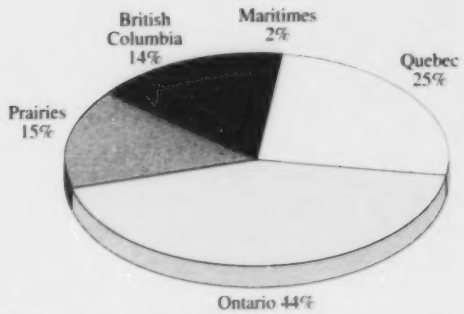
1. Tabulations for Year 2000 are based upon 12 months of averaged annual data.
2. National totals do not sum to total of provinces, as some data were confidential or non-existent at the provincial level.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

Table 7-17 shows employment by travel agencies, tour operators and tour wholesalers, by region, for the period 1996 to 2000.

Figure 7-4 shows the regional distribution of employees working for travel agencies, tour operators and tour wholesalers in 2000.

FIGURE 7-4: TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS EMPLOYMENT DISTRIBUTION, 2000



Note: Distribution based on the sum of employment reported by region.

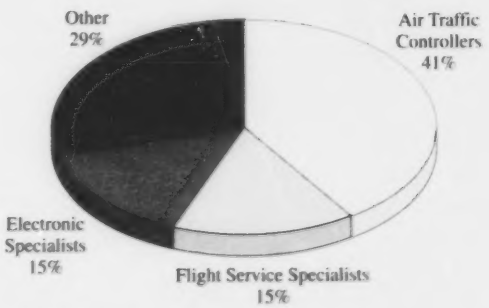
Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

NAV Canada

In 2000, there were 5,346 employees working at Nav Canada, a 1.5 per cent increase over 1999.

This increase was mainly driven by a 13.7 per cent increase in other personnel (engineers, pilots, technical support personnel, administrative staff and management) while personnel levels decreased in all other employment categories. The number of electronic service specialists decreased by 6.5 per cent in 2000; the number of flight service specialists decreased from 875 to 825, a 5.8 per cent decline over last year figures; and the number of air traffic controllers decreased by less than one per cent.

FIGURE 7-5: EMPLOYMENT BY NAV CANADA, 2000



Source: NAV Canada annual report

Figure 7-5 shows the personnel levels at Nav Canada at the end of 2000

Other Air-Related Associated Services

The Air Transport Association of Canada, the Canadian Air Traffic Control Association, the Canadian Owners and Pilots Association, the Canadian Seaplane Pilots Association and the Ultralight Pilots Association of Canada are among the numerous associations representing the interests of people in the air industry. The personnel employed by these air-related organizations could not be captured. There are also many unions in the air sector with administrative and other employees for which it was not possible to identify employment figures.

AVERAGE SALARIES

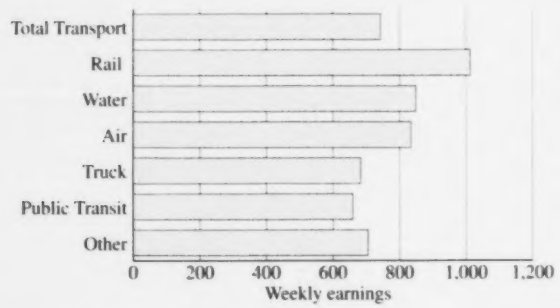
OVERVIEW

In 2000, average weekly earnings increased for all modes in the transportation sector. The trucking industry and public transit benefited from the highest increase, which averaged 2.1 per cent, and marine modes ranked second with a 1.6 per cent increase. From 1996 to 2000, employees working in the rail industry received weekly compensation 38 per cent higher, on average, than total transportation wages across all modes. The marine and air industries ranked second and third, respectively, in weekly earnings over the same period.

In 2000, workers in Alberta, British Columbia and Manitoba enjoyed the highest weekly earnings for transportation-related jobs, while workers in New Brunswick and Saskatchewan had the lowest. Between 1996 and 2000, British Columbia's weekly compensation was the greatest. Manitoba's average weekly earnings rose by 11.8 per cent over the same period, the largest increase recorded across the country, followed by Alberta, with an 11.1 per cent increase. New Brunswick is the only province where average weekly earnings declined in 2000 compared with 1996.

Table 7-18 shows the average weekly earnings in the transportation sector by mode and province, for the period 1996 to 2000.

FIGURE 7-6: AVERAGE WEEKLY EARNINGS, BY MODE, 2000



Note: Average based on 12-month weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

TABLE 7-18: AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR BY MODE AND PROVINCE, 1996 – 2000

(Current dollars)

By Mode[1]	*1996*	*1997*	*1998*	*1999*	*2000*[4]
Total Economy	586	598	606	610	626
Total Transport	695	716	729	734	743
Rail	977	999	992	1005	1,013
Water	813	829	828	836	849
Air[2]	803	816	812	825	834
Truck	613	638	674	669	683
Public Transit	577	627	632	645	659
Other[3]	659	690	694	700	705
By Province[5]	*1996*	*1997*	*1998*	*1999*	*2000*[7]
Nova Scotia	N/A[6]	618	646	683	716
New Brunswick	653	648	610	637	642
Quebec	657	680	689	696	707
Ontario	702	727	740	730	739
Manitoba	686	710	700	740	767
Saskatchewan	615	638	635	641	661
Alberta	685	707	728	764	761
British Columbia	807	815	849	837	839

1 Does not include owner-operators, private trucking, delivery services or government employees.
2 Does not include incidental services (jobs that are associated with a particular industry but not defined in Statistics Canada Cat. 72-002).
3 Includes taxis, interurban and other modes.
4 Average based on 12-month weighted annual averages.
5 Comparable information not available for Newfoundland, Prince Edward Island and the territories.
6 Data available only for Transportation and Storage.
7 Estimate based on 12-month weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

RAIL

The average annual compensation of employees working in the rail industry has increased from $51,602 to $57,585 over the last five years, an 11.6 per cent improvement since 1995. Throughout this period (1995 to 1999), employees directly involved in transportation-related activities received the highest salaries, 15.7 per cent above the industry average in 1999. In addition, Class I carrier employees earned annual wages significantly higher than their Class II counterparts in each employment category except equipment maintenance. In 1999, compensation in the rail industry increased by 2.3 per cent. While the salary of transportation employees saw an increase of 5.7 per cent,

that of equipment and road maintenance employees increased by less than two per cent and the salary of workers classified as "general" declined by 2.9 per cent.

Table 7-19 shows the average annual compensation in the rail industry by employment category, for the period 1996 to 1999.

TABLE 7-19: AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY, 1996 – 1999

(Current dollars)

	Total Rail[1]	*Class I*	*Class II*
1996			
General	54,597	55,862	42,969
Transportation	58,273	59,316	49,767
Equipment Maintenance	44,976	44,573	48,500
Road Maintenance	46,040	47,328	38,062
Total	**51,870**		
1997			
General	57,831	59,281	43,654
Transportation	59,928	61,285	45,443
Equipment Maintenance	46,088	45,648	49,820
Road Maintenance	48,245	49,526	40,953
Total	**53,803**		
1998			
General	62,779	61,337	44,185
Transportation	63,046	64,271	48,800
Equipment Maintenance	46,280	45,475	49,167
Road Maintenance	49,966	50,617	40,323
Total	**56,264**		
1999[2]			
General	60,974	62,445	46,374
Transportation	66,638	68,636	53,307
Equipment Maintenance	46,843	46,580	48,876
Road Maintenance	50,699	52,186	42,493
Total	**57,585**		

1 Total rail employment limited to carrier personnel.
2 Transport Canada estimates.

Source: Statistics Canada, Rail in Canada, Cat. 52-216

TRUCKING

Average weekly earnings in the Canadian trucking industry fluctuate significantly from one province to another From 1996 to 2000, three provinces have shown average weekly earnings above the national average: Alberta, British Colombia and Ontario. From year to year, British Columbia has displayed the highest weekly earnings, reaching 20 per cent above the national average in the last three years. In 1999, the lowest weekly earnings were recorded in the Atlantic provinces, coming close to 30 per cent below the national average in New Brunswick, Newfoundland and Prince Edward Island.

In 2000, a 1.9 per cent rise in the national average for weekly salaries was recorded. Weekly earnings increased in all provinces but New Brunswick, where a decline of less than one per cent was observed. Newfoundland displayed the largest increase, with earnings rising by 8.4 per cent. The highest weekly earnings were $816 in British Columbia, while the lowest were $480 in Prince Edward Island.

Table 7-20 shows the average weekly earnings in the trucking industry by province, for the period 1996 to 2000.

TABLE 7-20: AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1996 – 2000

(Current dollars)

	1996	*1997*	*1998*	*1999*	*2000*[1]
Eastern Canada					
Newfoundland	434	516	471	479	519
Prince Edward Island	478	535	470	463	480
Nova Scotia	505	538	558	584	612
New Brunswick	553	577	521	486	485
Quebec	553	573	616	613	620
Ontario	666	678	717	688	711
Western Canada					
Manitoba	575	590	619	632	657
Saskatchewan	540	569	588	553	555
Alberta	627	660	685	725	726
British Columbia	680	724	809	803	816
Canada	**613**	**638**	**674**	**669**	**683**

1 Average based on a 12 month weighted annual data.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

BUS

In 1999, average annual salaries in the passenger bus and urban transit industry declined in each industry segment except school bus transportation, where salaries increased by 9.4 per cent. School bus companies displayed the lowest average salaries over the last five years even though compensation rose by 11.9 per cent between 1995 and 1999, the largest increase recorded in the industry.

Intercity bus companies paid their employees an average annual salary of $29,969 in 1999. This represented an 8.4 per cent decrease from 1998 levels and the largest drop in salary recorded over the last five years for this segment of the industry. Compensation in this segment has been steadily declining since the mid-1990s, with an overall drop of 16.8 per cent from 1995 to 1999.

The average annual salary earned by employees working for charter bus companies has declined significantly in the last two years: by 16.5 per cent in 1998, and by 8.2 per cent in 1999. The 27 per cent compensation improvement observed in 1997 did not make up for the overall average decrease of 17.5 per cent recorded from 1995 to 1999.

Although employees of companies providing shuttle and sightseeing bus services had the second lowest

annual salaries recorded since 1997, they had the largest salary raises. After a 21 per cent increase in 1998, salaries declined in 1999 by 4.5 per cent.

Urban transit companies displayed the highest average annual salaries from 1995 to 1999. Although compensation has been increasing since 1995, it showed a slight decline in 1999.

Table 7-21 shows the average annual salary in the passenger bus and urban transit industry by segment for the period 1995 to 1999.

TABLE 7-21: AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY, 1995 – 1999

(Current dollars)

	1995	*1996*	*1997*	*1998*	*1999*
Intercity[1]	36,034	34,359	33,204	32,716	29,969
School Bus[1]	14,463	15,474	13,616	14,784	16,168
Charter[1]	23,185	19,652	24,982	20,856	19,137
Shuttle and Sightseeing[1]	N/A	N/A	16,225	19,613	18,729
Urban Transit[2,3]	50,882	52,275	52,827	53,826	53,356

Note: 1995 – 1999 data include full-time and part-time workers of companies with annual revenues greater than $2 million.
1 Data exclude employee benefits.
2 Data include employee benefits.
3 1998 and 1999 data include part-time workers.

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215 and special tabulations

MARINE

The salaries and benefits paid by Canadian-based marine carriers to their employees have increased by four per cent since 1995. The increase was driven mainly by an improvement in the compensation of non-vessel crew employees, whose salaries have increased by an average of 9.4 per cent since 1996. Employees of for-hire carriers saw their salaries increase by 10.7 per cent from 1995 to 1999, even though they showed only a 0.7 per cent increase in 1998.

For-hire carriers have higher labour costs than their government and private carrier counterparts, with an average gap of close to 15 per cent in recent years. The labour costs of government and private marine carriers declined slightly in 1998 (by less than one per cent), and have shown a downward trend of 4.7 per cent from 1995 to 1998.

Table 7-22 shows the average annual labour costs per employee for Canadian-based marine carriers for the period 1995 to 1999.

TABLE 7-22: ANNUAL LABOUR COSTS PER EMPLOYEE CANADIAN BASED MARINE CARRIERS[1], 1995 – 1999

(Current dollars)

	1995	*1996*	*1997*	*1998*	*1999*[2]
Government					
Vessel Crew		48,982	51,429	51,020	51,020
Other		42,043	42,422	43,721	43,721
Total	**50,142**	**46,507**	**48,154**	**47,763**	**47,763**
For-Hire[3]					
Vessel Crew		57,765	62,377	61,156	61,156
Other		40,255	41,748	47,533	47,533
Total	**51,750**	**52,580**	**56,915**	**57,127**	**57,127**
Total					
Vessel Crew		53,269	57,065	56,703	56,703
Other		41,340	42,147	45,209	45,209
Total	**50,600**	**49,291**	**52,370**	**52,540**	**52,540**

1 Private carriers information included with government carriers.
2 Estimates
3 Excluding Tour Boat Operator employees.

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

AIR

Annual labour costs per employee increased by 7.8 per cent in 1999 for Levels I–IV Canadian air carriers, the highest annual salary rise in the last five years. All employees of Levels I–III carriers have seen a significant improvement in their compensation. The average salaries of other flight personnel, which have been slightly decreasing since 1997, rose by 11 per cent in 1999. Notwithstanding this increase, their salaries were still 20 per cent below the average Levels I–III annual salary. Management and administrative employees saw their remuneration increase by 9.7 per cent, while pilots and other carrier personnel benefited from five and 6.8 per cent salary increases, respectively.

In 1999, employees working for Level IV air carriers saw an increase of 6.2 per cent in their compensation. This increase put an end to a downward trend since 1996, but did not reduce the salary gap that exists between

TABLE 7-23: ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS, 1995 – 1999

(Current dollars)

	1995	*1996*	*1997*	*1998*	*1999*[1]
Levels I-III[2]					
Pilots and Co-pilots	77,482	82,341	84,173	81,295	85,519
Other Flight Personnel	35,951	38,061	37,512	37,192	41,207
Management and Administration	48,734	51,072	49,937	52,551	57,525
Other Carrier Personnel	40,132	42,448	42,956	43,188	46,059
Total	**45,153**	**47,789**	**48,019**	**48,070**	**51,793**
Level IV Total[3]	**42,794**	**43,700**	**43,003**	**42,863**	**45,615**
Levels I-IV Total	**44,962**	**47,429**	**47,606**	**47,650**	**51,343**

1 Preliminary data.
2 Includes Canadian air carriers that in each of the two calendar years immediately preceding the reporting year, transported at least 5,000 revenue passengers or at least 1,000 tonnes of revenue goods. (http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html)
3 Includes Canadian air carriers not classified in Levels I to III that in each of the two calendar years immediately preceding the reporting year, realized annual gross revenues of $500,000 or more for air services for which the air carrier held a licence.

Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206

Level IV employees and their Levels I–III counterparts, which was 12.1 per cent in 1999.

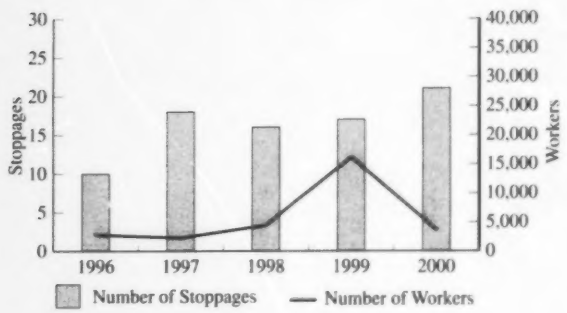
Table 7-23 shows the annual labour costs per employee by employment category for Levels I to IV of Canadian air carriers for the period 1995 to 1999.

LABOUR ACTION IN TRANSPORTATION

Work Stoppages

In 2000, the number of labour actions for air, marine and surface transportation totalled 21. The transport sector recorded its highest number of work stoppages in the last five years, with a 23.5 per cent increase compared with 1999 figures. While the bus and urban transit sector stood out clearly from the rest of the transport industry in 1999, with eight work stoppages recorded, or 47 per cent of the total labour actions, the water industry ranked first with 5 stoppages in 2000. The trucking and bus and urban transit industries each accounted for nearly one fifth of the total stoppages with four actions recorded. The air and taxi sectors recorded three stoppages each while there were two stoppages in the rail industry.

FIGURE 7-7: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1996 – 2000



Source: Human Resources Development Canada

Number of Workers Involved

Although it ranked first in 2000 in terms of the number of labour actions, the water sector ranked second for the number of workers involved in work stoppages. The labour actions occurring in the rail sector implicated the highest number of workers, with over 1,500 workers involved, making up to 45 per cent of the total in 2000. All transport sectors except the taxi industry recorded a decrease in the number of workers involved in stoppages in 2000.

Person-days Lost

The five stoppages reported in the water industry accounted for 35 per cent of the 57,570 person-days lost in 2000. Labour actions in Quebec accounted for 95 per cent of the person-days lost in the water sector and for close to 60 per cent of the losses in the truck sector. The truck and rail industries ranked second and third, with 16,350 and 7,390 person-days lost, respectively. Labour actions in the taxi industry accounted for 12 per cent of the losses. Quebec accounted for 51.3 per cent of all person-days lost due to labour actions in 2000. British Columbia and Ontario both reported over 5,000 person-days lost, in the rail and taxi sectors, respectively. Nova Scotia and Manitoba were not affected by labour actions in 2000.

Table 7-24 shows the number of stoppages, workers involved, and person-days lost due to labour actions in the transportation industry, for the period 1996 to 2000.

TABLE 7-24: LABOUR ACTION BY MODE OF TRANSPORT, 1996 – 2000

	1996	*1997*	*1998*	*1999*	*2000*
Number of Stoppages					
Air	1	7	3	1	3
Rail	1	0	1	3	2
Water	0	4	4	1	5
Truck	2	5	4	2	4
Bus/Urban	4	1	4	8	4
Taxi	2	1	0	2	3
Total	**10**	**18**	**16**	**17**	**21**
Workers Involved					
Air	147	1,177	2,693	265	165
Rail	502	0	25	2,130	1,654
Water	0	472	459	3,550	959
Truck	100	559	250	860	524
Bus/Urban	2,031	68	1,006	9,296	183
Taxi	49	7	0	24	164
Total	**2,829**	**2,283**	**4,433**	**16,125**	**3,649**
Person-Days Lost					
Air	600	51,420	33,840	8,520	4,480
Rail	2,150	0	180	7,080	7,390
Water	0	1,499	10,510	19,620	20,360
Truck	850	14,220	15,450	1,700	16,350
Bus/Urban	42,820	2,340	28,150	21,490	1,820
Taxi	3,440	850	0	110	7,170
Total	**49,860**	**70,329**	**88,130**	**58,520**	**57,570**

Source: Human Resources Development Canada

TRANSPORTATION AND TRADE

8

The growth of Canada's external trade once again surpassed that of domestic trade. Trade with the United States continued to be the driving force of this growth.

In Canada, trade and transportation are intrinsically linked. Trade relies on transportation for moving goods within and between provinces, and shipping commodities to and receiving them from other countries. The growth and structure of trade influences not only the increase in transport demand, but also the choice of modes.

This chapter explores the direct influence of Canada's domestic and international trade on transportation, in particular from 1993 to 1999. The discussion of domestic trade looks at goods and services[1] moved within and between provinces.[2] The examination of international trade focuses on both the composition of goods and services carried, and the modal choice.

DOMESTIC TRADE

Overview

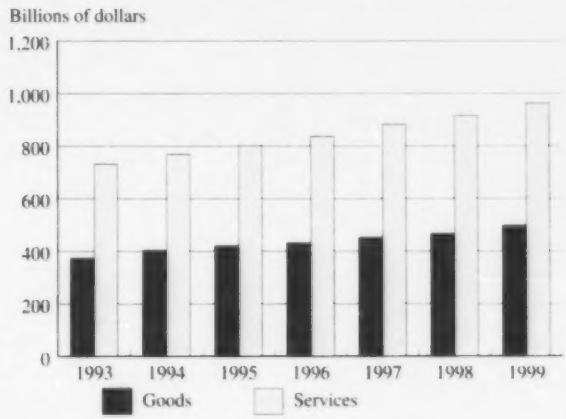
The value of domestic trade (goods and services) increased at an average annual rate of 4.7 per cent from 1993 to 1999, which equals a shift from $1,104 billion to $1,459 billion in current dollars. In terms of constant (1992) dollars, however, this annual average growth is only 3.2 per cent. When compared with that of external trade over the same period, this growth in domestic trade is moderate, which is explained later in the chapter.

Services dominated domestic trade from 1993 to 1999, with a share almost twice that for goods: 66 per cent compared with 34 per cent. Over the period, the value of services traded increased from $732 billion to $964 billion. In terms of sectors, intraprovincial trade remained the backbone of domestic trade, with a relatively constant 86 to 87 per cent of total domestic trade, while interprovincial trade levelled at 13 per cent.

Intraprovincial trade grew from $966 billion in 1993 to $1,270 billion in 1999, at an average annual growth rate of 4.6 per cent. Interprovincial trade flows grew at the higher average rate of 5.4 per cent, growing from $138 billion to $189 billion over the same period.

Figures 8-1 and 8-2 show Canada's domestic trade by type and sector from 1993 to 1999.

FIGURE 8-1: DOMESTIC TRADE BY TYPE, 1993 – 1999

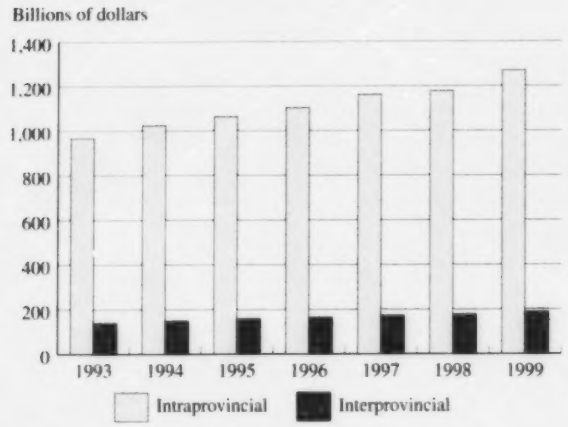


Source: Statistics Canada, Input-Output Division

1 "Goods" consist of primary and manufactured products. "Services" refer to activities such as transportation and storage, communication services, wholesale and retail trade services, finance, insurance and real estate services, business and personal, and miscellaneous services.

2 Interprovincial trade flows are estimated using the provincial National Accounts Information System, which is based on inputs and outputs. Statistics Canada recently issued a new time series up to 1999, but it does not include a modal breakdown of the provincial trade flows.

FIGURE 8-2: DOMESTIC TRADE BY SECTOR, 1993 – 1999



Source: Statistics Canada, Input-Output Division

COMPOSITION OF TRADE

Transportation needs are different for goods and services. The value of services rose from $732 billion in 1993 to $964 billion in 1999, with the vast majority (over 90 per cent) traded intraprovincially. Major domestic services were related to business and finance, the government sector, wholesale and retail trade, construction, and transportation.

Although they have a smaller share of domestic trade, the value of goods traded increased from $372 billion to $495 billion over the same period, representing an average annual growth of 4.9 per cent. Fabricated materials and manufactured goods captured approximately 80 per cent of total domestic trade, while primary goods and crude materials accounted for the rest. Over 75 per cent of total domestic trade in goods was intraprovincial.

Table 8-1 shows the value of domestic trade by sector and type of commodity in 1999.

TABLE 8-1: DOMESTIC TRADE BY SECTOR, 1999

(Billions of dollars)

	Goods	*Services*	*Total*	*Goods' Share (per cent)*	*Services' Share (per cent)*
Sectors					
Intraprovincial	387.6	882.1	1,269.7	31	69
Interprovincial	107.6	81.5	189.1	57	43
Total	**495.2**	**963.6**	**1,458.8**	**34**	**66**

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

TRANSPORTATION BY MODE

With an average annual growth of 3.5 per cent, the volume of goods carried by various modes rose from 372 million tonnes in 1993 to 456 million tonnes in 1999. Rail had the greatest share, moving between 46 and 50 per cent of the total tonnage during the period. For-hire trucking[3] ranked second, increasing its share from 38 per cent to 43 per cent. Marine's share decreased from 13 to 11 per cent, while air carried less than one per cent.

Table 8-2 shows that 456 million tonnes were moved domestically in 1999. Raw materials and primary goods made up more than 56 per cent of this total, while manufactured goods accounted for the rest. As expected, rail and marine carried the most primary goods traded within the country, capturing 75 per cent of the market. For-hire trucking also garnered a high percentage, carrying 67 per cent of fabricated materials and manufactured goods. This share would undoubtedly be higher if the activities of small for-hire carriers, private trucking carriers and owner-operators could also all be taken into account.

TABLE 8-2: DOMESTIC TRANSPORTATION FLOWS, 1999

(Millions of metric tonnes)

	Rail[1]	*Marine*	*For-hire Truck*	*Air*	*Total*
Primary Products					
Grains	25.9	5.3	5.3		36.5
Forest products	18.9	10.0	33.5		62.4
Metallic ores	48.8	7.1	1.4		57.3
Non-metallic Minerals	22.6	11.9	15.8		50.3
Mineral fuels	38.0	3.6	7.9		49.4
Total	154.2	37.9	63.9		255.9
Manufactured products	49.6	15.0	134.5	0.5	199.6
Total: All products	**203.8**	**52.9**	**198.4**	**0.5**	**455.6**

Note: Traffic flows take into account movements of shipments i.e. either loadings or unloadings (No double counting).

1 Rail 1999 preliminary.

Source: Transport Canada, adapted from various Statistics Canada publications

In 1999, containerized freight accounted for approximately seven per cent of domestic rail tonnage and nearly one per cent of domestic marine tonnage. No specific measure was found for containerized freight handled by for-hire trucking.

Manufacturing shipments could be used as a general indicator of trucking activity. In 1999, manufacturing shipments rose by 9.4 per cent to reach $491 billion, compared with gains of 3.2 per cent in 1998 and

3 For-hire trucking includes Class I and II carriers earning annual intercity revenues of $1 million or more, as defined by Statistics Canada in the "Quarterly For-Hire Trucking (Commodity Origin/Destination) Survey." Courier and messenger service, private carrier and owner-operator activities are excluded from the survey.

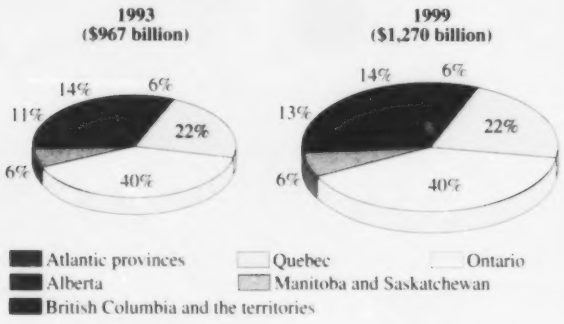
6.9 per cent in 1997. Performance in 2000 was similar to 1999, with manufacturing shipments rising again by nine per cent to settle at $535 billion. These gains in 1999 and 2000 were the strongest seen by manufacturers since 1995, when shipments increased by 12.5 per cent.

INTRAPROVINCIAL TRADE

With a constant share of over 85 per cent, intraprovincial trade made up the bulk of total domestic trade value from 1993 to 1999. In 1999, intraprovincial trade amounted to $1,270 billion, including $882 billion in services and $388 billion in goods traded.

Figure 8-3 shows that distribution of intraprovincial trade by province did not vary significantly from 1993 to 1999. Ontario dominated with close to 40 per cent of Canada's total intraprovincial trade. Quebec ranked second with 22 per cent, followed by British Columbia and the territories at 14 per cent. Alberta came next with 13 per cent, followed by Manitoba and Saskatchewan, sharing six per cent, and the Atlantic provinces, also sharing six per cent.

FIGURE 8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1993 AND 1999



Source: Statistics Canada, Input-Output Division

Table 8-3 shows that rail and for-hire trucking filled most of the transportation needs generated by intraprovincial trade in 1999. In fact, trucking's share is probably larger than indicated here, as data on small for-hire, owner-operators and private carriers are only partially captured.

TABLE 8-3: DOMESTIC TRANSPORTATION FLOWS, BY SECTOR AND MODE, 1999

(Millions of tonnes)

Sectors	*Rail*[1]	*Marine*	*For-hire Truck*	*Air*	*Total*
Intraprovincial	85.4	34.0	150.6	N/A	270.0
Interprovincial	118.4	18.9	47.8	N/A	185.1
Total:	203.8	52.9	198.4	0.5	455.6

Notes: N/A = Non Available
Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).
1 Rail 1999 preliminary (estimated).

Source: Transport Canada, adapted from various Statistics Canada data

INTERPROVINCIAL TRADE

As mentioned previously, interprovincial trade represented less than 15 per cent of total domestic trade value from 1993 to 1999, which is a relatively small share. It is, however, an important component of domestic trade because it shows economic interactions between provinces, as well as the changes in these interactions. Interprovincial trade amounted to $189 billion in 1999, distributed between goods traded at $108 billion and services at $81 billion.

Finance and business, wholesale and retail trade, and transportation were the major services traded between provinces, while food products, machinery and equipment, and mineral fuels were the major goods traded. Table 8-3 shows that rail and for-hire trucking carried over 85 per cent of total interprovincial tonnage in goods moved between provinces in 1999.

MAIN EAST–WEST ROUTES

In 1999, six interprovincial trade flows of $10 billion or more represented 53 per cent of total interprovincial trade. Valued at $54 billion, or 29 per cent of total trade between provinces, the two largest movements were between Ontario and Quebec. Ontario to Quebec flows totalled $30 billion, while the reverse flows amounted to $24 billion. Other large movements involved Ontario to Alberta at $14 billion, followed by Ontario to British Columbia at $12 billion, Ontario to Atlantic provinces at $11 billion, and Alberta to Ontario at $10 billion. These dominant flows were stable from 1993 to 1999.

Table 8-4 shows the main interprovincial trade markets and underlines the strong linkages between neighbouring provinces. Ontario was the only province to show an interprovincial trade surplus for all years.

Figures 8-4 and 8-5 illustrate primary interprovincial trade flows in 1999.

TABLE 8-4: INTERPROVINCIAL TRADE, MAIN EAST–WEST ROUTES, 1999

(Billions of dollars)

Routes (from/to)	*Trade Value*	*Total two-way*	*Share in per cent*
Ontario/Quebec	29.9	53.8	28.5
Quebec/Ontario	23.9		
Ontario/Alberta	13.6	23.7	12.5
Alberta/Ontario	10.1		
Ontario/British Columbia	11.7	16.1	8.5
British Columbia/Ontario	4.4		
Ontario/Manitoba and Saskatchewan	8.8	15.0	7.9
Manitoba and Saskatchewan/Ontario	6.2		
Ontario/Atlantic provinces	10.6	14.2	7.5
Atlantic provinces/Ontario	3.6		
Alberta/British Columbia	6.9	13.3	7.0
British Columbia/Alberta	6.4		
Alberta/Manitoba and Saskatchewan	5.8	10.1	5.3
Manitoba and Saskatchewan/Alberta	4.3		
Quebec/Atlantic provinces	5.8	9.3	4.9
Atlantic provinces/Quebec	3.5		
Quebec/Alberta	4.1	6.8	3.6
Alberta/Quebec	2.7		
Quebec/British Columbia	3.9	6.0	3.2
British Columbia/Quebec	2.1		
Subtotal:		168.3	89.0
Other Routes		20.8	11.0
Total Interprovincial Trade		**189.1**	**100.0**

Note: No double counting as the exports of one province are the imports of another. Interprovincial trade includes value of goods and services.

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

FIGURE 8-4: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1999

(Billions of dollars)

Source: Transport Canada

FIGURE 8-5: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, OTHER REGIONS AS ORIGIN, 1999

(Billions of dollars)

Note: Other regions excludes Ontario as origin.

Source: Transport Canada

INTERNATIONAL TRADE

OVERVIEW

Comparing east–west interprovincial trade flows with north–south international trade flows reveals the increasing importance of outside markets to provincial economies. From 1993 to 1999, international exports and imports grew at an average annual rate of 10.9 per cent and 9.5 per cent, respectively. These rates doubled the average growth of 5.4 per cent experienced in interprovincial trade during the same period.

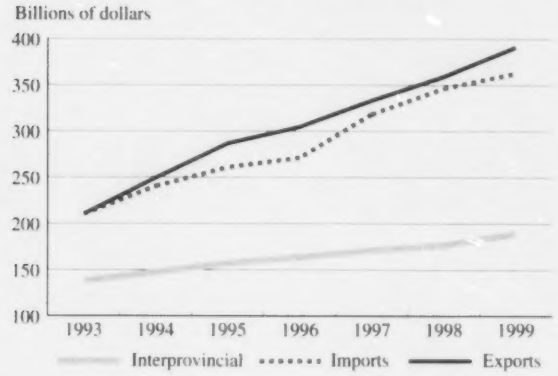
In 1999, exports and imports, including goods and services, amounted to $391 billion and $362 billion, respectively, while interprovincial flows reached $189 billion.

Figure 8-6 indicates trends in interprovincial trade versus exports and imports from 1993 to 1999.

COMPOSITION OF EXPORTS AND IMPORTS

Goods were the main component of international trade from 1993 to 1999, with a share ranging from 82 to 84 per cent. Services accounted for the rest. In 1999, Canada traded an estimated $629 billion in goods and an estimated $124 billion in services at the international level.

FIGURE 8-6: TRENDS — INTERPROVINCIAL TRADE VERSUS EXPORTS AND IMPORTS, 1993 – 1999

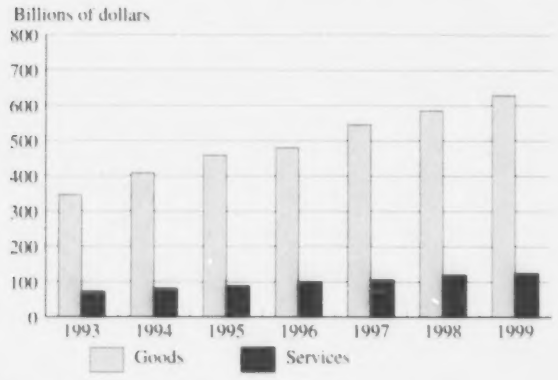


Source: Statistics Canada, Input-Output Division

From 1993 to 1999, 90 per cent of goods traded internationally were manufactured products and fabricated materials, with the share of primary goods and raw materials falling from 11 to eight per cent over the period. Services traded internationally were business and finance, transportation, trade wholesaling, and personal/miscellaneous services.

Figure 8-7 illustrates Canada's external trade by type from 1993 to 1999.

FIGURE 8-7: INTERNATIONAL TRADE BY TYPE, 1993 – 1999



Source: Statistics Canada, Input-Output Division

Trade Flows and Modal Choice

The following sections will examine the relation between trade flows and the choice of modes in two ways: trade of goods between Canada and the United States, and Canada's trade with other countries.

Canada–US Trade

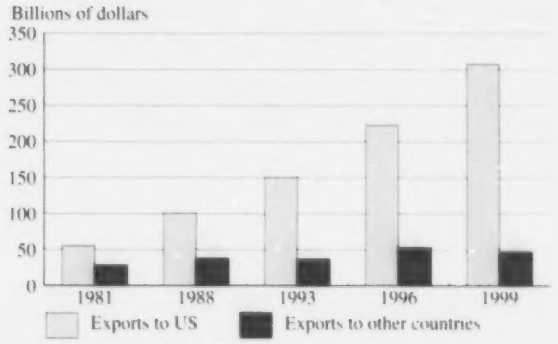
Impact of Canada–US Trade

Canada's trade with the United States exerts a powerful influence over economic and trade activity performance in Canada. In the last 20 years, the share of exports to the United States has risen from 66 per cent of Canada's total exports in 1981 to 87 per cent in 1999. Preliminary figures for 2000 establish the share of exports to the United States at 87 per cent of total Canadian exports.

From 1993 to 1999, exports to the United States grew at an average annual rate of 12.9 per cent, more than *three times* the average growth rate of 4.2 per cent experienced in Canada's exports to other countries. Canada's exports to the United States went from $151 billion to $308 billion over the period, while exports to other countries levelled at $47 billion in 1999, compared with $37 billion in 1993. The modest performance in exports to other countries is partially explained by the Asian and Latin American currency crises in 1998, followed by the recession and slow recovery in 1999 that took a heavy toll on the economies in these regions. Preliminary figures in 2000 show a more robust growth rate for Canada's exports to these countries.

Figure 8-8 shows the importance of the United States in Canada's exports during the past two decades.

FIGURE 8-8: US IMPORTANCE IN CANADA'S EXPORTS, 1981 – 1999



Source: Statistics Canada, Cat. 65-202

For the past 20 years, Canada's imports from the United States have been relatively stable, oscillating between 65 and 69 per cent of Canada's total imports. Preliminary figures for 2000 show that the share of imports from the United States has decreased to 64 per cent. From 1993 to 1999, both imports from the United States and other countries showed an average annual growth rate of 11 per cent.

Modal Split

In 1999, trucking dominated transborder trade, with 60 per cent of total exports moved to the United States, valued at $185 billion, and 81 per cent of all imports from the United States, valued at $175 billion. From 1993 to 1999, trucking's share increased from 58 to 60 per cent of exports, while remaining stable in imports at 79 to 82 per cent. Rail ranked second, with 22 to 24 per cent of exports over the period, but only eight to nine per cent of total imports. The pipeline mode, included in "Other" mode, ranked third in carrying exports to the United States, while air registered a slight increase in its share of both exports and imports, ranking second for imports over the period.[4]

On a tonnage basis, the pipeline mode ranked first, moving between 41 and 45 per cent of the total tonnes exported to the United States. Trucking came next with 21 to 24 per cent, followed closely by rail at 18 to 19 per cent, and marine at 16 to 17 per cent. In 1999, nearly 308 million tonnes were moved to the United States. On the import side, the trucking and marine modes dominated, with 49 and 33 per cent of total tonnage imported from the United States respectively. In 1999, over 106 million tonnes were shipped to Canada from the United States.

Table 8-5 examines the value of Canada's exports to and imports from the United States by mode and sector from 1993 to 1999, and looks at the number of tonnes during the same period.

Canada-US Trade by Region

Ontario captured nearly 66 per cent of Canada's trade with the United States in 1999, accounting for $183 billion in exports and $161 billion in imports. Quebec came next at 14 per cent, followed by Alberta at seven per cent and British Columbia at six per cent. These four provinces accounted for more than 90 per cent of all trade with the United States in 1999, a scenario that was constant from 1993 to 1999. All Canadian provinces, except Manitoba and the Yukon territory, registered a positive trade balance with the United States, with their exports exceeding their imports. Table 8-6 shows Canada's trade with the United States by province.

On the US side, all regions[5] recorded a negative balance with Canada, except the South, which shipped

TABLE 8-5: CANADA–US TRADE BY MODE AND SECTOR, 1993 – 1999

Year	Billions of dollars	Share in per cent				
		Road	Rail	Marine	Air	Other
Exports[1]						
1993	150.7	57.6	24.4	2.9	4.5	10.6
1995	207.8	57.5	25.1	3.3	4.7	9.4
1997	243.9	59.7	22.1	2.8	5.0	10.5
1999	308.1	60.2	22.8	2.2	5.7	9.1
Imports						
1993	113.8	81.9	8.5	1.6	7.5	0.5
1995	150.7	80.1	9.5	1.5	8.6	0.3
1997	184.3	79.2	9.6	1.5	9.2	0.6
1999	215.4	81.1	7.8	1.3	9.4	0.4
Year	Million tonnes[2]	Share in per cent				
		Road	Rail	Marine	Air	Other
Exports						
1993	221.8	20.8	18.9	16.8	0.1	43.4
1995	271.7	20.1	17.8	16.7	0.2	45.2
1997	294.4	21.0	18.1	17.1	0.1	43.6
1999	307.5	24.0	19.0	16.3	0.2	40.6
Imports						
1993	N/A	N/A	N/A	N/A	N/A	N/A
1995	77.4	47.2	14.9	35.2	1.4	1.3
1997	98.6	49.9	13.3	32.1	1.0	3.7
1999	106.2	49.2	13.6	33.4	0.9	2.8

Note: N/A = Not Available
1 Total exports including domestic exports and re-exports.
2 Tonnes estimated based on weight conversion factors developed by Statistics Canada

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations. Transport Canada, adapted from Statistics Canada

TABLE 8-6: CANADA–US TRADE BY PROVINCE, 1999

(Billions of dollars)

	Exports	Imports	Total	Share in per cent
Ontario	182.8	160.6	343.4	65.6
Quebec	52.6	20.9	73.5	14.0
Alberta	29.4	7.6	37.0	7.1
British Columbia	20.2	12.5	32.7	6.3
Manitoba	6.6	7.1	13.7	2.6
Saskatchewan	5.7	3.7	9.4	1.8
New Brunswick	5.2	2.1	7.3	1.4
Nova Scotia	3.1	0.7	3.8	0.7
Newfoundland	2.0	0.1	2.1	0.4
Prince Edward Island	0.5	0.0	0.5	0.1
Yukon and Northwest Territories	0.0	0.1	0.1	0.0
Total	**308.1**	**215.4**	**523.5**	**100.0**

Note: Trade includes total exports and imports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

4 More than one mode of transportation might be used to carry traded goods from origin to destination. For *exports*, the mode of transportation indicates the mode by which the international boundary is crossed. For *imports*, the mode of transportation represents the last mode by which the cargo was transported to the port of clearance in Canada. This may not be the mode by which the cargo arrived at the Canadian port of entry in the case of inland clearance. This may lead to some underestimation of Canadian imports by the marine and air modes.

5 The four US regions include the US Central, i.e. the states bordering the Great Lakes (Central East) as well as North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West); the US North East, which refers to the New England and Atlantic states, including New Jersey, New York and Pennsylvania; the US South, which includes southern states from the Atlantic coast to the Gulf of Mexico; and the US West, which includes US mountain and Pacific states. Data related to unknown states were left in a residual category called "US Other."

more goods to Canada than it received. This pattern has been prevalent for the last 10 years. In 1999, the US Central region dominated US trade with Canada, with $222 billion, or 42 per cent of the trade ($127 billion from Canada and $95 billion to Canada). The North East region ranked second with $117 billion, or 22 per cent of the trade, followed by the South at $102 billion and the West at $75 billion.

From 1989 to 1999, two US regions increased their shares of trade with Canada: The South moved from 17 per cent to 20 per cent, and the West moved from 12 per cent to 14 per cent. Canada's increased trade with the US South was largely carried by trucking, whose share rose from 64 per cent to 69 per cent of total trade over the period. The rising trade with the US West was still dominated by the trucking mode, increasing its share from 52 per cent to 55 per cent; followed by air, increasing from 14 to 18 per cent; and raiil, increasing from 14 to 16 per cent.

Table 8-7 shows transborder trade by US region for 1989 and 1999.

TABLE 8-7: CANADA–US TRADE BY US REGION, 1989 AND 1999

(Billions of dolllars)

			Share in per cent	
	1989	*1999*	*1989*	*1999*
US Central	87.9	221.8	46.4	42.4
US North East	45.6	116.7	24.1	22.3
US South	31.8	102.2	16.8	19.5
US West	22.5	75.1	11.9	14.4
US Other[1]	1.5	7.7	0.8	1.4
Total	**189.3**	**523.5**	**100.0**	**100.0**

Note: Trade includes total exports and imports.
1 US Other includes residual unspecified data.

Source: Statistics Canada, Cat. 65-202 and 65-203, special tabulations

Preferred Mode and Commodity Mix

As noted previously, trucking dominated Canada–US trade in 1999, carrying 60 per cent of exports in value and 24 per cent in tonnage, and over 80 per cent of imports in value and near 50 per cent in tonnage. In addition, Canada-based for-hire trucking carriers have been carrying goods over greater distances. From 1989 to 1999, the average distance by tonne carried kept rising by an annual average rate of 2.4 per cent for exports (from 825 to 1,047 kilometres) and at an average rate of 1.6 per cent for imports[6] (from 948 to 1,240 kilometres).

The number of trucks crossing Canada–US border points has also continued to rise. From 1991 to 2000, trucks moving across the border increased at an average annual rate of 7.4 per cent, increasing from 19,680 vehicles to 37,360 vehicles on a daily basis.[7] The share of daily crossings for trucks belonging to Canadian firms rose from 57 per cent to 68 per cent over the same period.

In 1999, exports to the United States moved by trucks totalled $185 billion. Trucks dominated the carriage of all product categories except mineral fuels, petroleum products and metallic ores. They carried 54 per cent of all automobile products (valued at $45 billion) shipped to the US, 80 per cent of all machinery and equipment products ($22 billion), 88 per cent of all food products ($13.6 billion), 74 per cent of all electrical/electronic material and equipment ($13.4 billion) and more than 60 per cent of all paper products ($12.8 billion). Canada's imports trucked from the United States amounted to $175 billion in 1999.

Major Canada–US Trade Flows

In 1999, Canada's trade with the United States included 17 two-way trade flows worth at least $10 billion each, representing over 80 per cent of all Canada–US trade. The trucking mode was dominant, capturing a 50 per cent share or more in 14 of them. Ontario was involved in eight of these trade flows, including the largest four flows, which totalled $272 billion, or 52 per cent of total transborder trade.

The largest trade flow was between Ontario and the US states bordering the Great Lakes, accounting for a 30 per cent share, with exports of $85 billion and imports of $73 billion.

The automobile products trade dominated Ontario's exports, which went mostly to Michigan and were valued at $53 billion. Of these, 57 per cent were carried by trucks, while 43 per cent were carried by rail. Likewise, Ontario's imports consisted mainly of automobile products, valued at $29 billion, and machinery or equipment products, valued at $17 billion. In both cases, trucking moved over 90 per cent of these commodities.

Table 8-8 indicates major trade flows between Canada and the United States in 1999, showing the modal breakdown for each.

Figures 8-9 and 8-10 illustrate the major Canada–US trade flows involving Ontario and other provinces.

6 Based on Statistics Canada, "Quarterly For-hire Trucking (Commodity Origin/Destination) Survey."

7 Adapted by Transport Canada, from Statistics Canada, International Travel Section, Tables 1A and 1B.

TABLE 8-8: CANADA–US TRANSBORDER TRADE SHOWING MAIN NORTH–SOUTH TRADE FLOWS, 1999

(Billions of dollars)

Canadian Region	*US Region*	*Exports from Canada*	*Imports to Canada*	*Share in Total trade*	*Main modes used Per cent*	*(Per cent of total value)*
Ontario	US Central East	85.4	73.3	158.7	30	Road (79), Rail (19)
Ontario	US Middle Atlantic	33.1	21.3	54.3	10	Road (77), Rail (17)
Ontario	US Pacific	19.9	9.9	29.7	6	Road (54), Rail (24)
Ontario	US South Atlantic	12.3	17.0	29.2	6	Road (81), Rail (10)
Quebec	US Middle Atlantic	14.2	4.5	18.7	4	Road (77), Air (12)
Ontario	US South Central	6.3	11.4	17.8	3	Road (81), Rail (16)
Ontario	US Central West	7.7	9.2	16.8	3	Road (76), Rail (14)
British Columbia	US Pacific	9.5	6.5	16.0	3	Road (69), Pipeline (11)
Ontario	US South West	6.0	9.9	15.9	3	Road (71), Rail (16)
Quebec	US New England	8.7	5.2	13.9	3	Road (86), Rail (5)
Prairies	US Central East	8.8	4.3	13.1	3	Road (41), Pipeline (37)
Quebec	US Central East	10.1	2.2	12.3	2	Road (55), Rail (34)
Prairies	US Central West	8.3	3.2	11.5	2	Road (58), Pipeline (26)
Ontario	US New England	6.4	4.8	11.2	2	Road (76), Air (16)
Quebec	US South Atlantic	7.3	2.9	10.2	2	Road (65), Air (17)
Prairies	US Pacific	7.3	2.0	9.3	2	Road (40), Pipeline (34)
Prairies	US Middle Atlantic	6.1	1.5	7.6	1	Road (32), Pipeline (47)
Subtotal:		**257.3**	**189.0**	**446.3**	**85**	
Other		50.8	26.4	77.2	15	
Total Canada–US trade:		**308.1**	**215.4**	**523.5**	**100**	

Note: US Central includes the states bordering the Great Lakes (Central East) and those of North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West);
US North East refers to New England states and Middle Atlantic states such as New Jersey, New York, and Pennsylvania;
US South includes southern states from the Atlantic coast to the Gulf of Mexico; and
US West refers to US mountain states and Pacific states.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

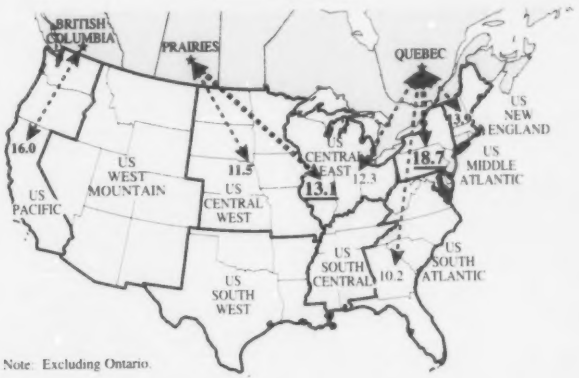
FIGURE 8-9: CANADA–US TRADE, MAIN ONTARIO TRADE FLOWS, 1999

(Billions of dollars)

Source: Transport Canada

FIGURE 8-10: CANADA–US TRADE, MAIN CANADIAN REGIONS TRADE FLOWS, 1999

(Billions of dollars)



Note: Excluding Ontario.

Source: Transport Canada

Many internal and external factors affect the growth of Canada's trade with the United States. Among these are the gradual reduction of tariffs on goods as a result of trade agreements and dollar exchange rate fluctuations. From 1988 to 1999, the share of duties collected on total goods imported from the US decreased steadily, from 2.6 per cent to 0.1 per cent.[8] As for exchange rate fluctuations, these have made Canadian goods relatively less expensive to American consumers for the last 10 years.

Table 8-9 shows exchange rates for Canadian dollars for selected years between 1989 and 2000.

8 Adapted by Transport Canada, from Statistics Canada, International Trade database, 1988–99.

TABLE 8-9: EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED CURRENCY

	US Dollar	*British Pound*	*German Mark*	*Japan Yen ('000s)*
1989	1.184	1.941	0.631	8.60
1993	1.290	1.938	0.781	11.65
1995	1.372	2.166	0.959	14.68
1998	1.484	2.459	0.845	11.40
1999	1.486	2.404	0.811	13.11
2000	1.485	2.250	0.701	13.78

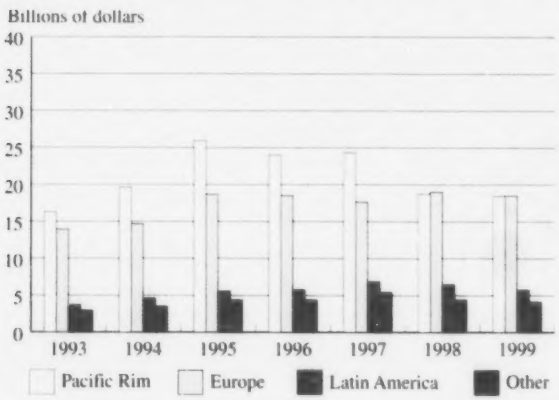
Source: Statistics Canada, Cat. 11-010

CANADA'S TRADE WITH OTHER COUNTRIES

OVERVIEW

Although less significant than trade with the United States, Canada's trade with countries other than the United States is still worthy of discussion. From 1993 to 1999, imports from countries other than the United States represented 32 to 33 per cent of Canada's total imports. Exports to those same countries accounted for only 13 per cent of Canada's total exports in 1999, down from 20 per cent in 1993. The export situation is partially explained by the financial crisis and recessions that hit the Asian and Latin American economies in 1998 and their sluggish recovery in 1999. Canada's exports to countries other than the United States grew by an average annual rate of only 4.2 per cent over the period. Canada's imports from these countries were more robust with an average annual growth of 11 per cent from 1993 to 1999.

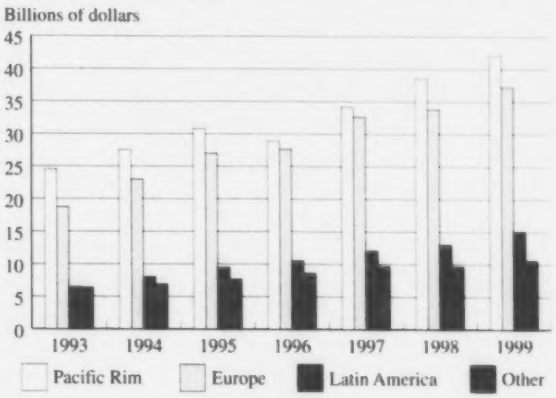
FIGURE 8-11: EXPORTS TO NON-US COUNTRIES, 1993 – 1999



Source: Statistics Canada, International Trade Division

Figures 8-11 and 8-12 illustrate Canada's trade with countries other than the United States from 1993 to 1999.

FIGURE 8-12: IMPORTS FROM NON-US COUNTRIES, 1993 – 1999



Source: Statistics Canada, International Trade Division

TRADE BY MODE

As in previous years, marine and air were the primary modes to carry Canada's trade with countries other than the United States. From 1993 to 1999, the marine share of total exports to these countries decreased slightly from 73 per cent to 71 per cent, while the air share rose from 17 to 21 per cent. Air exports to these countries grew at an average annual rate of 7.6 per cent over the period, increasing from $6 billion in 1993 to almost $10 billion in 1999.

The modal picture on imports might be somewhat more confusing.[9] For example, marine dominated Canada's imports from countries other than the United States although apparently lost its strong share. Trucking ranked second, while air imports were third with a share that soared from 17 per cent to 23 per cent from 1993 to 1999. The trucking figure is probably overestimated[10] because part of it covers transshipment via the United States, with the rest distributed between the marine and air modes.

The air mode's increasing share indicates a growing trend toward moving high-valued trade commodities, such as electronic and telecommunications equipment, by air. From 1993 to 1999, machinery and equipment products moved from other countries by air increased at an average annual rate of 16 per cent, while electric/electronic machinery or equipment increased by 29 per cent.

9 Truck and rail information can be used to estimate the importance of Canada's trade with countries other than the United States, routed through the United States. With imports, however, such an estimate is more difficult to determine, as customs cargo control documents information may lead to some underestimation of Canadian imports by the marine and air modes.

10 Please see notes 4 and 9.

In terms of tonnage, modal breakdown of Canada's trade with countries other than the United States is completely marine-oriented. In 1999, 182 million tonnes were shipped from Canada to non-US countries, including 98 per cent using the marine mode. Approximately 70 million tonnes were shipped to Canada from those other countries, 84 per cent of which involved water.

Table 8-10 shows the value and tonnage of Canada's trade with countries other than the United States by mode and sector between 1993 and 1999.

TABLE 8-10: CANADA–NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1993 – 1999

Year	Billions of dollars	Share in per cent				
		Road	Rail	Marine	Air	Other
Exports[1]						
1993	$36.9	9.2	1.1	72.6	17.1	0.0
1995	54.5	9.4	1.2	74.0	15.4	0.0
1997	54.2	9.1	1.7	72.8	16.4	0.0
1999	46.8	6.6	1.7	70.9	20.8	0.0
Imports						
1993	$56.1	26.1	3.9	50.8	16.6	2.7
1995	74.9	25.1	3.7	49.7	19.5	1.9
1997	88.5	31.3	4.5	40.1	22.0	2.1
1999	104.7	34.7	3.3	38.2	23.3	0.5
Year	Million tonnes[2]	Share in per cent				
		Road	Rail	Marine	Air	Other
Exports						
1993	143.4	0.9	0.2	98.6	0.3	0.0
1995	172.0	1.3	0.3	98.1	0.4	0.0
1997	189.9	1.0	0.2	98.4	0.4	0.0
1999	182.3	1.7	0.3	97.7	0.3	0.0
Imports						
1993	N/A	N/A	N/A	N/A	N/A	N/A
1995	59.5	5.4	1.2	78.8	0.9	13.7
1997	71.3	6.6	1.0	79.4	0.9	12.2
1999	69.6	9.1	1.3	83.5	1.3	4.8

Note: N/A = Not Available
1 Total exports including domestic exports and re-exports.
2 Tonnes estimated based on weight conversion factors developed by Statistics Canada.

Source: Statistics Canada, Cat. 65-202 and 65-203, Special tabulations. Transport Canada, adapted from Statistics Canada

Direction of Trade Flows

From 1993 to 1997, exports to countries other than the United States originated almost equally from eastern and western provinces, at 51 per cent and 49 per cent, respectively. Beginning in 1998, however, eastern provinces accounted for a larger proportion of exports with 54 per cent. This change reflects decreased exports to Pacific Rim countries, which were primarily shipped from the western provinces. Ontario, Quebec and British Columbia were the main provinces of origin for exports shipped to overseas countries. In 1999, over 80 per cent of total exports to overseas countries originating from western provinces were shipped through British Columbia gateway ($17.3 billion), mainly Vancouver which captured 86 per cent of this total.

In terms of the import of goods, more than 80 per cent of commodities shipped to Canada by overseas countries came through the eastern provinces, mainly Ontario at 50.8 per cent. This trend was constant from 1993 to 1999. Canada had a negative trade balance with most countries other than the United States. In 1999, exports to these countries totalled $47 billion, while imports totalled $105 billion. Preliminary figures for 2000 show the same imbalance, with exports valued at $50 billion and imports valued at $127 billion.

Table 8-11 shows the provinces' shares of Canada's trade with countries other than the United States in 1999.

TABLE 8-11: CANADA'S TRADE WITH NON-US COUNTRIES BY PROVINCE, 1999

(Billions of dollars)

	Exports	Imports	Total	Share in per cent
Ontario	12.7	50.8	63.5	41.9
Quebec	9.5	27.6	37.1	24.5
British Columbia	9.5	14.7	24.2	16.0
Alberta	5.4	2.7	8.1	5.3
Nova Scotia	1.0	3.9	4.9	3.2
Saskatchewan	4.3	0.5	4.8	3.2
New Brunswick	1.0	2.1	3.1	2.0
Manitoba	1.5	1.2	2.7	1.8
Newfoundland	1.0	1.2	2.2	1.5
Yukon and Northwest Territories	0.9	0.0	0.9	0.6
Prince Edward Island	0.0	0.0	0.0	0.0
Total	**46.8**	**104.7**	**151.5**	**100.0**

Note: Total exports by province of origin, imports by province of clearance.

Source: Statistics Canada, Cat. 65-202 and 65-203, Special tabulations.

Major Trade Flows

In 1999, five major trade flows worth at least $10 billion each represented 68 per cent of all trade between Canada and countries other than the United States. Three of these flows involved eastern provinces and three were import movements. For export movements, major flows were from the eastern provinces to European countries, with $13.7 billion, and from the western provinces to Pacific Rim countries, with $12.8 billion. For import movements, major flows were from European countries to the eastern provinces, with $33.9 billion; Pacific Rim countries to the eastern provinces, with $28.9 billion; and Pacific Rim countries to the western provinces, with $13.2 billion.

The largest trade flow involved goods moving from European countries to the eastern provinces, with a total value of $34 billion. Marine captured 49 per cent of this flow with an approximate value of $17 billion, made up mainly of mineral fuels and petroleum products worth $4.2 billion, machinery and equipment worth $2.6 billion, automobile products with $2 billion and food products at $1.9 billion. Imports by air amounted to $11 billion, or

33 per cent of the trade flow. End manufactured products, with a total value of $4.2 billion, and machinery/equipment products including electronic components, with a value of $4.1 billion, were the main shipments by air.

The second largest flow was goods shipped from Pacific Rim countries to the eastern provinces, which amounted to $29 billion. Three modes were the major carriers on this route: trucking at $11.4 billion, or 39 per cent of total shipments; marine at $8.8 billion, or 30 per cent; and air at $7.6 billion, or 26 per cent. Three commodity groupings represented the bulk of this trade flow: machinery/equipment products valued at $7.5 billion, electrical and electronic material equipment valued at $7.3 billion and manufactured end-products valued at $7.2 billion. Electronic materials were shipped mainly by air, while manufactured products were shipped by marine. As mentioned previously, the road share is overestimated,[11] as part of it covers transshipment via the United States, with the rest feeding the marine and air modes.

Tables 8-12 and 8-13 show the major trade flows between Canada and countries other than the United States in 1999.

TABLE 8-12: CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999

(Billions of dollars)

	Origin			
Exports to:	*Eastern provinces*	*Western provinces*	*Total*	*Main modes used (Per cent of total value)*
Europe	13.7	4.8	18.5	Marine (65), Air (32)
Pacific Rim[1]	5.7	12.8	18.5	Marine (82), Air (13)
Latin America[2]	2.7	1.4	4.1	Marine (60), Road (22)
Mexico	1.0	0.6	1.6	Marine (31), Road (42)
Other	2.1	2.0	4.1	Marine (76), Air (17)
Total	**25.2**	**21.6**	**46.8**	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.
2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

TABLE 8-13: CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999

(Billions of dollars)

	Destination			
Imports from:	*Eastern provinces*	*Western provinces*	*Total*	*Main modes used (Per cent of total value)*
Pacific Rim[1]	28.9	13.2	42.1	Marine (39), Road (37)
Europe	33.9	3.3	37.2	Marine (47), Air (33)
Mexico	8.6	0.9	9.5	Road (74), Rail (16)
Latin America[2]	4.8	0.5	5.3	Marine (44), Road (39)
Other	9.4	1.2	10.6	Road (46), Marine (32)
Total	**85.6**	**19.1**	**104.7**	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.
2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

Figures 8-13 and 8-14 illustrate Canada's main trade flows with overseas countries in 1999.

FIGURE 8-13: EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1999

(Billions of dollars)

Source: Transport Canada

FIGURE 8-14: IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1999

(Billions of dollars)

Source: Transport Canada

RECENT TRENDS

In 1998, the world economy and trade were affected by financial crises and recessions that started in Japan and then spread to neighbouring Asian countries and Latin America. In 1999, the economies of these Asian and Latin American countries did not fully recover and remained sluggish. As a result, Canadian exports to Japan and Asian countries were significantly affected, declining by 23 per cent in 1998 and three per cent in 1999. Likewise, Canadian exports to South American countries registered two consecutive decreases, dropping 16 per cent and 27 per cent from their 1997 levels.

11 Please see notes 4 and 9.

In 2000, the world economic climate was more optimistic. Canada's domestic exports to countries other than the United States registered a healthy increase of 12.5 per cent to reach $50.4 billion, close to the high 1997 level of $52 billion. Over the same time, domestic exports to the United States increased by 16.5 per cent.

On the import side, the situation reverses as Canada's imports from other countries increased faster than imports from the United States. In 1999, Canada's imports from countries other than the United States were strong, growing over 10 per cent compared with 1998, while imports from the United States rose by only 5.8 per cent. In 2000, the growth rate for imports from other countries soared to 21 per cent, while the rate for imports from the United States stayed at the 1999 level of 6.4 per cent. Consequently, Canada's imports from the United States accounted for 64 per cent of total Canadian imports, compared with 68 per cent two years before.

Tables 8-14 and 8-15 show Canada's exports and imports by major country groupings in 1999 and 2000.

TABLE 8-14: CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1999 AND 2000

(Billions of dollars)

Destination	*1999*	*2000*	*Growth rate (per cent)*
US	**286.6**	**333.8**	**16.5**
Non-US countries	**44.8**	**50.4**	**12.5**
Japan	8.3	8.9	7.0
Other Asia	9.2	10.7	16.6
Mexico	1.5	1.9	28.5
Other Latin America[1]	3.8	3.9	3.9
Western Europe	16.8	19.3	14.7
Other[2]	5.2	5.6	8.3
Total World	**331.3**	**384.1**	**15.9**

Note: Preliminary data for 2000 Canadian domestic exports.
1 Including Antilles, South and Central American countries, except Mexico.
2 Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2000

TABLE 8-15: CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1999 AND 2000

(Billions of dollars)

Origin	*1999*	*2000*	*Growth rate (per cent)*
US	**215.5**	**229.3**	**6.4**
Non-US countries	**104.8**	**127.2**	**21.4**
Japan	15.0	16.6	10.4
Other Asia	26.9	32.9	22.2
Mexico	9.5	12.1	26.6
Other Latin America[1]	5.3	6.4	19.5
Western Europe	35.8	42.8	19.8
Other[2]	12.2	16.3	34.4
Total World	**320.3**	**356.5**	**11.3**

Note: Preliminary data for 2000.
1 Including Antilles, South and Central American countries, except Mexico.
2 Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2000

TRANSPORTATION AND TOURISM 9

Spending on tourism in Canada reached $50.1 billion in 1999, of which $20.1 billion, or 40 per cent was spending on transportation.

This chapter reviews two major aspects of transportation and tourism. First, it examines tourism spending in Canada by Canadians and foreign visitors, including spending on transportation. It also compares the value of spending by foreigners travelling in Canada against the value of spending by Canadians travelling outside Canada.

Second, it takes a broad overview of travel, including a look at both domestic and international travel by distribution, purpose and mode. This overview also includes sections on travel between Canada and the United States and between Canada and countries other than the United States.

"Tourism" in this chapter refers to people travelling to and staying in places outside their usual environment for leisure, business and other purposes for no longer than one year. For Canadians travelling within Canada, a trip must be at least 80 kilometres from the traveller's place of residence to be considered as tourist travel. International travel refers to travel to or from Canada. The United Nations World Tourism Organization, Statistics Canada and the Canadian Tourism Commission use this definition of tourism.

TOURISM EXPENDITURES

Tourism Spending in Canada

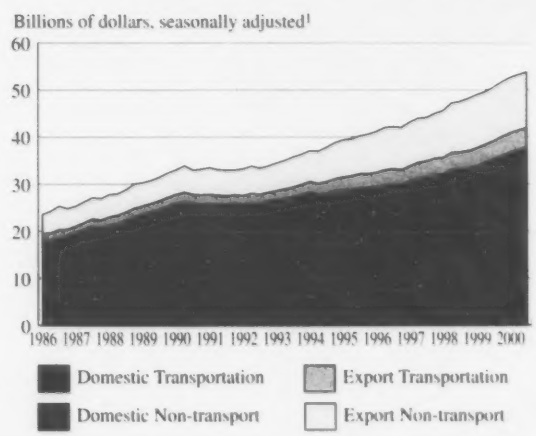
Tourism spending in Canada falls under two categories — spending by Canadians and spending by foreign visitors. Domestic expenditures relate to tourism spending by Canadians in Canada, while export expenditures (or tourism exports) relate to spending by foreign visitors in Canada.

Spending on tourism in Canada reached $50.1 billion in 1999, up 6.5 per cent from 1998. This growth continued in 2000, with tourism expenditures in the first three quarters reaching $19.5 billion, up 7.2 per cent from the same period in 1999. A rise in the price of fuel resulted in an increase in spending on transportation relative to spending on non-transportation. Figure 9-1 shows the trends in the distribution of tourism spending over the last 15 years.

Spending on Transportation

Tourism expenditures on transportation totalled $20.1 billion in 1999, up 8.5 per cent from 1998, when it rose five per cent over the previous year. The increase in the price of fuel was the main factor behind the increase in spending on transportation. Transportation spending accounted for 40.1 per cent of all tourism spending in 1999, up from 39.3 per cent in 1998.

FIGURE 9-1: TOURISM SPENDING IN CANADA, 1986 – 2000



1 Quarterly data at annual rates.

Source: Statistics Canada, Cat. 13-009-XPB

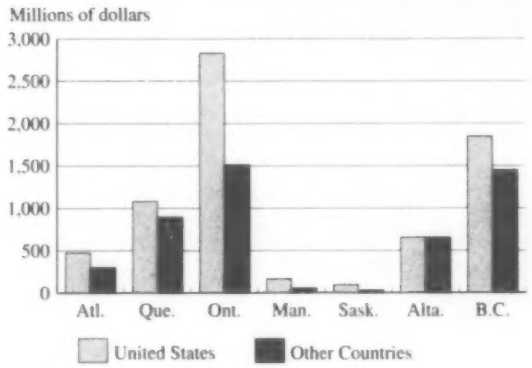
Spending on air transportation was $11.6 billion, an 9.6 per cent increase from 1998. It made up 57.7 per cent of total transportation tourism spending. Tourism spending on motor vehicle transportation made up 34.5 per cent of the total in 1999. The amount spent on vehicle fuel rose 11.1 per cent in 1999 after falling 2.6 per cent in 1998. Intercity bus transportation accounted for 3.1 per cent and rail for 1.2 per cent of total tourism spending on transportation, while spending on other forms of transportation, including water transport, urban transit, taxi and parking, made up 3.6 per cent. Table 9-1 shows tourism spending on transportation in relation to other tourist goods in 1999.

Distribution of Spending

Of the total $50.1 billion in tourism expenditures in Canada in 1999, Canadians spent 69 per cent, or $34.8 billion. Foreign visitors spent 31 per cent of the total, continuing the upward trend of the past few years in the foreign proportion of tourism spending. Foreign spending rose 7.7 per cent in 1999, compared with a six per cent rise in domestic spending in 1999. In the first three quarters of 2000, domestic demand strengthened relative to foreign demand, as domestic spending rose 7.7 per cent while foreign spending rose 6.2 per cent.

In 1999, tourism spending by non-residents rose in all regions at least eight per cent, with the exception of Ontario, where it rose only 3.2 per cent. Although Ontario had the lowest percentage increase in non-resident tourism spending, it accounts for almost 40 per cent of total spending. Atlantic Canada had an increase of 26 per cent, the highest of any region in Canada. This was due to increased spending by both US tourists (16.7 per cent) and other foreign visitors (44.1 per cent). In Quebec, expenditures by US tourists rose 17 per cent, while expenditures by tourists from other countries fell 1.5 per cent. Ontario had a small increase in spending by tourists from all areas. Spending by foreign tourists in Manitoba and Saskatchewan rose 16.6 per cent and 22.3 per cent, respectively. While both types of foreign spending rose sharply, the total expenditures in Manitoba and Saskatchewan make up only three per cent of the total spending in all regions. Foreign tourism spending rose by about nine per cent in both Alberta and British Columbia. Figure 9-2 shows the regional distribution of tourism spending on overnight trips by non-residents in 1999.

FIGURE 9-2: EXPENDITURES BY OVERNIGHT NON-RESIDENT VISITORS BY PROVINCE, 1999



Note: Staying one or more nights in Canada.

Source: Statistics Canada, Cat. 66-201

TABLE 9-1: TOURIST SPENDING IN CANADA ON TRANSPORTATION AND OTHER MAJOR CATEGORIES, 1999

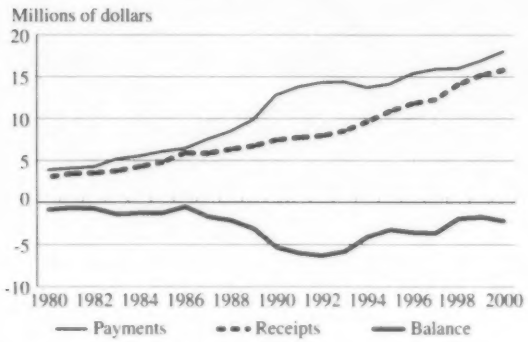
	Domestic *(Millions of dollars)*	*Per cent change 1998/99*	***Exports*** *(Millions of dollars)*	*Per cent change 1998/99*	***Total*** *(Millions of dollars)*	*Per cent change 1998/99*
Transportation	16,165	8.5	3,919	8.5	20,084	8.5
Passenger Air Transport	9,426	9.9	2,170	8.3	11,596	9.6
Passenger Rail Transport	144	8.3	88	6.0	232	7.4
Interurban Bus Transport	412	1.2	201	6.3	613	2.9
Vehicle Rental	361	0.3	653	9.0	1,014	5.7
Vehicle Repairs and Parts	1,907	2.3	83	3.8	1,990	2.3
Vehicle Fuel	3,456	11.2	469	10.6	3,925	11.1
Other Transportation	459	2.9	255	9.0	714	5.0
Accommodation	3,636	2.1	3,424	8.4	7,060	5.1
Food and Beverage Services	4,562	3.1	3,541	7.6	8,103	5.0
Other Tourism Commodities	3,649	4.9	1,424	7.8	5,073	5.7
Total Tourism Commodities	28,012	6.3	12,308	8.1	40,320	6.8
Total Other Commodities	6,812	4.8	2,980	6.2	9,792	5.3
Tourism Expenditures	**34,824**	**6.0**	**15,288**	**7.7**	**50,112**	**6.5**

Source: Statistics Canada, Cat. 13-009

The Travel Account and International Passenger Fares

The international travel account looks at the spending of foreign visitors travelling in Canada and compares it with the value of what Canadians are spending when they travel outside the country. Figure 9-3 shows the balance of Canada's international travel account between 1980 and 2000.

FIGURE 9-3: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 2000



Source: Statistics Canada, Cat. 66-201

Travel Deficits

Canada's travel deficit rose by 28.1 per cent in 2000 to $2.23 billion, reversing the decrease of the previous three years. This increase reflects the fact that Canadian spending outside Canada rose at a greater rate than spending by foreigners in Canada.

Canadians spent $18 billion outside the country in 2000, up 6.1 per cent. Foreign tourists spent $15.7 billion in Canada, an increase of only 4.2 per cent. Canadians increased their spending in the United States by 4.7 per cent to $11.2 billion, while Americans increased their spending in Canada by 2.9 per cent to $9.5 billion. The travel deficit with the United States rose 16.1 per cent to $1.7 billion. Canada's travel deficit with other countries also rose, as Canadians spent $6.5 billion, or 10.1 per cent more, abroad in 2000. Overseas visitors increased their expenditures in Canada by 6.2 per cent to $6.2 billion. The overseas travel deficit increased by 86 per cent to $557 million.

International Passenger Fares

Canadians increased their purchases by 9.2 per cent to $4.06 billion of passenger fares from foreign carriers in 2000, while Canadian carriers sold $3.12 billion in passenger fares to foreign travellers, a 15.5 per cent increase. The result was a 7.8 per cent decline to $934 million deficit in this account. Air fares accounted for almost all of these transactions, with Canadians purchasing $3.81 billion worth from foreign carriers. On the other side of the equation, Canadian air carriers sold $3.08 billion in air fares to foreign travellers. For land transportation, Canadians spent $93 million on passenger fares from foreign carriers, while foreign travellers spent $33 million on fares from Canadian carriers. Payments for US water transportation by Canadians totalled $95 million in 2000, while US residents paid $15 million. Two million dollars worth of US rail fares were purchased by Canadians, while US residents bought $7 million worth.

TRAVEL OVERVIEW

Table 9-2 presents an overview of domestic travel by Canadians in 1999 and of international travel by both Canadians and non-residents in 1999 and 2000.

TABLE 9-2: CANADIAN TRAVEL SUMMARY, 1999 – 2000

	2000	1999			
	Person-trips (000)	Person-trips (000)	Duration (nights)	Average distance (km)	Average spending ($)
Domestic		143,180	1.7	294	137
Same-day		96,723	-	151	56
Intraprovincial		66,355	-	145	52
Interprovincial		3,368	-	253	127
Overnight		73,457	3.3	430	214
Intraprovincial		58,491	2.7	267	138
Interprovincial		14,966	5.4	1,070	510
International	95,819	95,504			
Canadians	47,182	46,448	-	-	333
to US	42,666	42,768	-	-	226
Same Day	28,073	28,082	-	-	41
Overnight	14,594	14,105	7.1	-	595
to Other Countries	4,515	4,244	16.4	-	1,396
Americans	43,993	44,630	-	-	281
Same Day	28,879	28,450	-	-	59
Overnight	15,114	15,180	3.9	-	621
Non-US Residents	4,643	4,425	-	-	1,108
Same Day	205	194	-	-	37
Overnight	4,438	4,231	11.3	-	1,168

Source: Statistics Canada, Cat. 87-504-XPB and 66-201

Domestic Travel

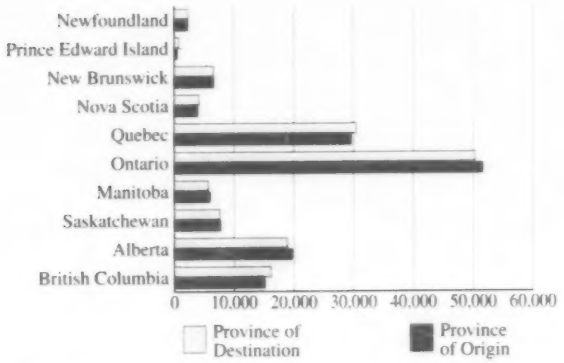
Canadians took 143.2 million domestic travel trips in 1999, an increase of just under one per cent, compared with an increase of 13 per cent in 1998. Same-day trips increased 1.4 per cent while overnight trips rose only marginally. Interprovincial trips rose more than intraprovincial trips for both same-day and overnight trips. In fact, overnight intraprovincial trips actually fell marginally.

Distribution of Travel by Province

As can be seen in Figure 9-4, travel volumes by province reflect the distribution of the Canadian population. In 1999, the most populous province, Ontario, was the destination for 35 per cent of total domestic trips, followed by Quebec with 21 per cent, Alberta with 13 per cent and British Columbia with 11 per cent. This pattern also holds true for the number of trips taken by provincial residents. The largest differences between the relative population size and the relative number of trips taken are in Alberta. Albertans took about four per cent more trips than their relative population size. Quebec on the other hand, took about three per cent less.

FIGURE 9-4: DOMESTIC TRAVEL BY PROVINCE, 1999

(Person-trips of 80+ kilometres)



Source: Statistics Canada, Cat. 87-504-XPB

On a per capita basis, Canadians each took 4.7 trips in 1999. The residents of Alberta, Saskatchewan and New Brunswick travel the most, around seven trips per year; the residents of Prince Edward Island and British Columbia travel the least, taking just under four trips per year. The number of trips taken by residents of Prince Edward Island has risen by about one trip per year since the Confederation Bridge opened. About 13 per cent of all trips in Canada were interprovincial trips.

Purpose and Mode of Travel

In 1999, Canadians took 55.4 million trips for pleasure, which represented 39 per cent of total trips, a two per cent increase over 1998. Of total trips, Canadians took 50.2 million, or 35 per cent to visit friends and relatives, a one per cent drop from 1998. Trips for business or to attend conventions made up 14 per cent of total trips, while 13 per cent were for personal reasons. These percentages were unchanged from the previous year.

As Table 9-3 shows, the automobile is by far the most dominant means of transport. Overall, it accounted for 91.8 per cent of all trips taken in 1999, a proportion that remains virtually unchanged from 1998. For same-day trips, the automobile accounted for 96.2 per cent of trips compared with 87.7 per cent for overnight trips. The second most common means of transportation is the airplane, which accounted for 4.2 per cent of all travel. There was a drop of one per cent in overnight business travel by airplane in 1999.

TABLE 9-3: DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1999

(Per cent of person-trips 80+ kilometres)

			Overnight, primary trip purpose		
	Total	*Same day*	*Total*	*Non-Business*	*Business*
Car	91.8	96.2	87.7	90.5	65.4
Plane	4.2	0.8	7.5	4.8	29.4
Bus	2.6	2.3	2.9	3.0	2.5
Rail	0.6	0.2	0.9	0.8	1.8
Boat	0.4	0.1	0.6	0.6	-
Other	0.4	0.3	0.4	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada, Cat. 87-504-XPB

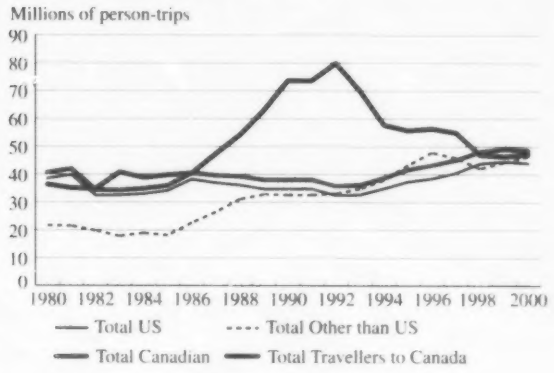
International Travel

The total number of travellers who crossed Canadian borders in 2000 rose 0.3 per cent to 95.8 million, reversing a decline in trips in 1999. Canadians increased their trips to both the United States and other destinations, with total international trips rising by 1.6 per cent to 47.2 million. There was a 1.1 per cent increase in the trips by Canadians to the United States compared with a 1.3 per cent decline in 1999. The number of Canadians travelling overseas increased by 6.2 per cent, up substantially from a less than one per cent increase in 1999. Americans took 44 million person-trips, or 1.4 per cent fewer trips to Canada in 2000, while other nationalities took 4.6 million person-trips, or 4.9 per cent more trips. Figure 9-5 shows trends in international travellers entering Canada between 1980 and 2000.

Canada–US Travel

Overall, travel between Canada and the US fell marginally, by 0.2 per cent, in 2000 to 86.6 million. This is attributable to a fall in US travel to Canada that was steeper than the rise in Canadian travel to the United States. Same-day automobile trips continued to be the most prevalent, accounting for 62.2 per cent. While this proportion was about 66 per cent from 1987 to 1997, it has been falling over the past three years.

FIGURE 9-5: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 2000

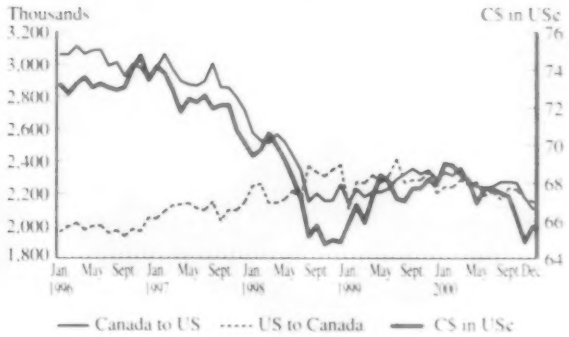


Source: Statistics Canada, Cat. 66-201

Putting an end to a four-year downward trend, same-day visits by Canadians to the United States were stable in 2000 at 28.1 million. Overnight visits rose 3.5 per cent to 14.6 million; this continues the upward trend of 1999, which had a 5.0 per cent increase. American same-day trips fell 1.9 per cent to 28.9 million and overnight trips fell 0.4 per cent to 15.1 million. Overnight trips in both directions fell from May to August, reflecting the price of gas and the cool, damp summer. Figures 9-6 and 9-7 show the trends in same-day and overnight travel between Canada and the United States.

FIGURE 9-6: SAME-DAY CANADA–US AUTOMOBILE EXCURSIONS, 1996 – 2000

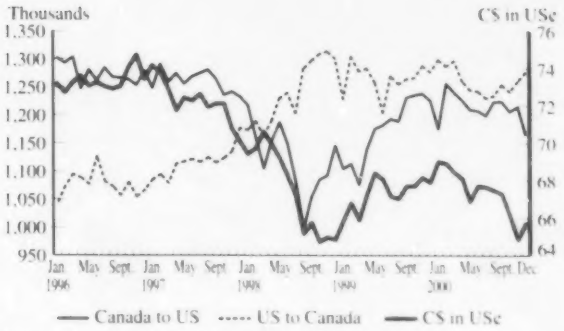
(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

FIGURE 9-7: OVERNIGHT CANADA–US EXCURSIONS, 1996 – 2000

(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

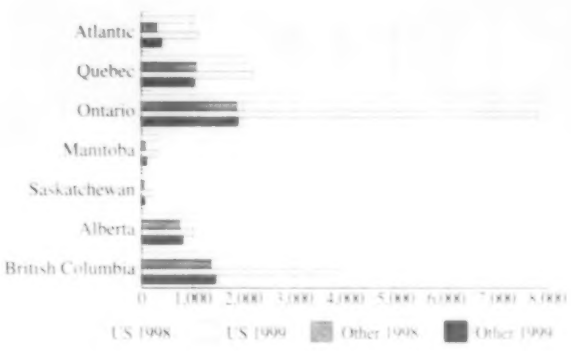
Distribution of Travel

In 1999, the number of Canadians travelling to the United States increased by 4.9 per cent over 1998. There was little change in the popularity of the destinations. New York and Michigan accounted for 18 and eight per cent, respectively, of the total same-day visits in 1999 and Pennsylvania and Vermont each accounted for six per cent. The top states for overnight stays remained New York, with 12 per cent of total trips in 1999, Florida and Washington each with nine per cent, Michigan with six per cent and California with five per cent.

For Americans travelling to Canada in 1999, Ontario was by far the most popular province, accounting for 47 per cent of total overnight trips. As indicated in Figure 9-8, British Columbia accounted for 25 per cent and Quebec for 15 per cent, while Alberta and the Atlantic provinces accounted for nine and seven per cent, respectively.

FIGURE 9-8: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1998 – 1999

(Thousands of overnight visits)



Source: Statistics Canada, Cat. 66-201

Purpose of Travel

An increasing number of Canadians continue to make overnight trips to the United States for business purposes. In 1999, business travel accounted for 19 per cent of trips, virtually unchanged from 1998, but up from the 16 per cent share in 1996 and 1997. Conversely, there was a drop in trips by Canadians for pleasure purposes in 1999, from 57 to 52 per cent. The number of trips to visit friends and relatives continued to rise in 1999, making up 19.5 per cent of overnight travel, up from 17 per cent in 1996. The remaining proportion of overnight trips, about nine per cent, was taken for other reasons such as health and religion.

In contrast, the proportion of overnight trips to Canada taken by Americans has remained stable for the past several years. Pleasure, including recreation and holiday, was the primary reason for 57 per cent of American overnight trips to Canada in 1999. Visiting friends and relatives remains the reason for 18 per cent of trips, while business is the purpose for 16 per cent.

Means of Travel

While Table 9-4 shows that the automobile was used for most Canada–US travel in 2000, there have been small increases in the use of other modes over the past several years. This trend is strongest in overnight travel. Between 1996 and 2000, for example, the percentage of Canadians using an automobile to take overnight trips to the United States fell from 63 per cent to 55 per cent. Over the same period, airplane travel has risen steadily from 29 to 36 per cent. There have also been steady marginal increases in the use of other modes. For same-day traffic, although the automobile remained dominant with about 97 per cent in 2000, there has been a steady but small drop in this proportion.

TABLE 9-4: CANADA–US TRAVEL BY MODE, 2000

(Thousands of person-trips)

	Canadians		*Americans*	
	Total	*Per cent*	*Total*	*Per cent*
Same Day	**28,073**	**100.0**	**28,879**	**100.0**
Auto	27,105	96.6	26,646	92.3
Plane	176	0.6	532	1.8
Bus	678	2.4	1,073	3.7
Other	114	0.4	628	2.2
Overnight	**14,594**	**100.0**	**15,114**	**100.0**
Auto	7,967	54.6	9,457	62.5
Plane	5,300	36.3	3,836	25.4
Bus	728	5.0	798	5.3
Boat	123	0.8	328	2.2
Foot	340	2.3	537	3.6
Other	137	0.9	158	1.0
Total	**42,666**		**43,993**	

Source: Statistics Canada, Cat. 66-201

While not as pronounced, there has also been a drop in the use of the automobile by Americans coming to Canada. Since 1996, the percentage of Americans coming to stay for one night or more in an automobile has fallen by two per cent to 62.5 per cent, while the proportion who come by airplane has risen by two per cent to 25.4 per cent. The number of Americans who come by car for same-day trips has fallen by almost one per cent to 92 per cent.

The proportion of Canadians returning to Canada by air from countries other than the United States via the United States was 15.7 per cent in 2000, similar to the previous four years. After rising to 38 per cent in 1999, the proportion of non-Americans coming to Canada by air via the United States returned to 33 per cent, where it had been for 10 years.

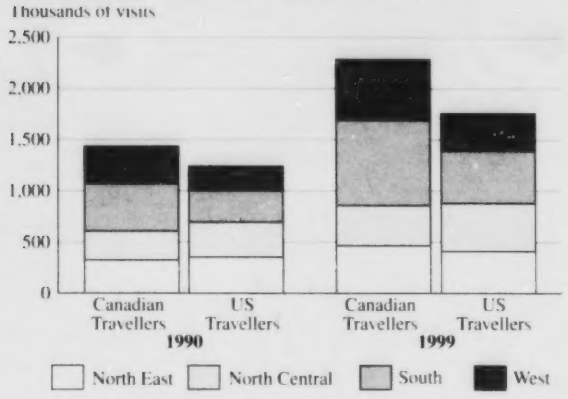
Business Travel between the US and Canada

From 1990 to 1999, business travel grew by an average rate of 0.8 per cent per year, while non-business travel fell 2.6 per cent per year. Business travel between Canada and the United States has grown by 0.8 per cent per year over the past 10 years. This has occurred as the North American economy has grown and become more integrated following the signing of the Canada–US Free Trade Agreement (FTA) in 1987 and the North American Free Trade Agreement (NAFTA) in 1992, and with the Open Skies policy of 1995, which allowed freer air travel between the two countries.

While this overall trend in business travel growth has remained constant over the past 10 years, there have been differences in the travel by Canadians and Americans, and in air compared to automobile travel. Figures 9-9 and Figure 9-10 present information on Canadian and American business travellers to the United States by air and car. Business travel by air over this period has grown strongly, at 4.7 per cent a year, while business travel by automobile fell 1.6 per cent a year. Overall business travel by Canadians to the United States barely grew between 1990 and 1999; however, business travel by Americans grew at an average rate of 1.9 per cent per year.

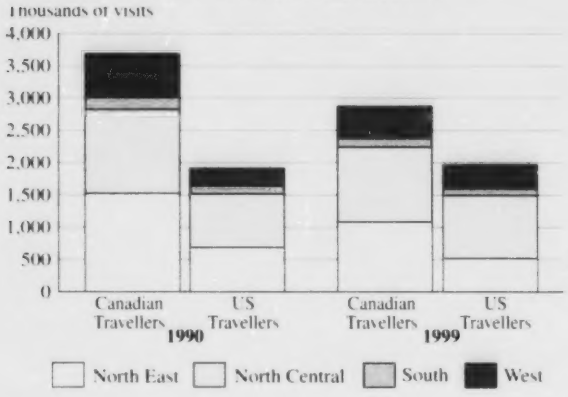
Business air travel by Canadians to the United States rose 5.3 per cent a year between 1990 and 1999, while by Americans to Canada it grew 3.9 per cent a year. Growth was greatest by both Americans and Canadians to and from the southern states. For Canadians, this was highlighted by more trips to Florida, which rose by almost 100,000 a year over the period; for Americans, it meant more trips from all the southeastern states. For both Canadians and Americans, the share of trips between Canada and the southern states rose from 28.8 per cent

FIGURE 9-9: CANADA–US AIR BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999



Source: Statistics Canada, International Travel Survey, Special tabulations

FIGURE 9-10: CANADA–US AUTOMOBILE BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999



Source: Statistics Canada, International Travel Survey, Special tabulations

to 33.3 per cent, as the total number of trips rose by 6.4 per cent a year. At same time, trips to the western US grew by 5.3 per cent a year and the share of all air trips to the west rose by just over one per cent. The number of trips by Canadians from Ontario to California grew by about 70,000 a year, making up over half of the total visits by all Canadians to the western United States. The number of business trips to the northeastern and the north-central regions rose over the period; however, their share of total air business trips fell.

From 1990 to 1999, total business travel by automobile fell despite a marginal increase in the number of trips by Americans. This overall drop was due to a decline of 2.7 per cent a year in trips by Canadians. Canadian business trips to all regions paralleled the general drop in automobile travel to the United States. Business travel by Canadians to the north-central region of the United States, however, had the smallest drop, at 1.3 per cent a year. This region's share of trips rose from 35 to 40 per cent, while the shares of all other regions fell. For Americans coming to Canada on business, the number of trips fell only for those originating in the northeastern and the southern states.

As shown in Tables 9-5 and 9-6, in 1999 at least 55 per cent of business travel by both air and automobile between Canada and the US had Ontario as either the origin or the destination. For air travel, Quebec, British Columbia and Alberta were the next most popular provinces accounting for 17.2 per cent, 10.5 per cent and 8.3 per cent respectively for Canadian business travellers and 18.2 per cent, 13.8 per cent and 8.2 per cent for US business travellers. These rankings were similar in 1990 although there was an increase in the share from Ontario of about two per cent and a corresponding drop in the share from Alberta. Between 1990 and 1999, Canadian business travellers from all provinces increased their trips although the growth was strongest for residents from Newfoundland and New Brunswick, while for US travellers, there was a fall in trips to the three Maritime provinces and the Territories.

TABLE 9-5: CANADA–US AIR BUSINESS TRAVEL, BY PROVINCE, 1999

	Canadian Travellers			U.S. Travellers		
	1999	*Per cent share*	*1990-99 annual per cent change*	*1999*	*Per cent share*	*1990-99 annual per cent change*
Newfoundland	16,200	0.7	10.9	10,000	0.6	527.0
Prince Edward Island	4,000	0.2	5.4	1,400	0.1	(8.1)
Nova Scotia	42,600	1.9	5.8	22,400	1.3	(0.4)
New Brunswick	34,000	1.5	12.4	8,500	0.5	(0.8)
Quebec	393,800	17.2	5.4	319,200	18.2	4.3
Ontario	1,269,000	55.5	5.9	962,300	54.9	3.8
Manitoba	56,700	2.5	6.6	30,400	1.7	3.0
Saskatchewan	36,100	1.6	3.8	13,300	0.8	3.8
Alberta	190,400	8.3	1.5	143,800	8.2	4.9
British Columbia	238,800	10.5	5.0	241,300	13.8	4.4
Yukon/Northwest Territories	3,200	0.1	8.0	800	0.0	(8.0)
Canada	**2,284,800**	**100.0**	**5.3**	**1,753,400**	**100.0**	**3.9**

Source: Statistics Canada, International Travel Survey, Special compilations

In 1999, business travel by automobile, after Ontario the next most popular provinces were British Columbia followed by Quebec and New Brunswick. For Canadian business travellers, 13.6 per cent came from British Columbia, 12.3 from Quebec and 9.2 from New Brunswick. As total automobile business travel by Canadians fell from 1990 to 1999, these provincial shares all dropped from 1990 by one or two percent while Ontario's rose five percent. For US business travellers, 61.8 per cent went to Ontario, 15.4 per cent to British Columbia, 9.7 per cent to Quebec and 6.8 per cent

TABLE 9-6: CANADA–US AUTOMOBILE BUSINESS TRAVEL, BY PROVINCE: 1999

	Canadian Travellers			U.S. Travellers		
	1999	Per cent share	1990-99 annual per cent change	1999	Per cent share	1990-99 annual per cent change
Newfoundland	500	0.0	10.7	300	0.0	N/A
Prince Edward Island	3,000	0.1	(8.8)	2,000	0.1	19.6
Nova Scotia	25,500	0.9	17.9	5,400	0.3	(1.3)
New Brunswick	264,500	9.2	(5.3)	129,600	6.6	(3.9)
Quebec	353,500	12.3	(3.6)	190,400	9.7	(0.3)
Ontario	1,599,100	55.7	(1.7)	1,213,100	61.8	0.7
Manitoba	109,200	3.8	(3.0)	71,600	3.6	(1.0)
Saskatchewan	38,800	1.4	(8.3)	15,000	0.8	(3.3)
Alberta	83,200	2.9	1.7	29,200	1.5	0.8
British Columbia	391,400	13.6	(4.4)	302,800	15.4	2.4
Yukon/Northwest Territories	2,200	0.1	(9.5)	4,500	0.2	(6.4)
Canada	**2,870,900**	**100.0**	**(2.7)**	**1,963,900**	**100.0**	**0.3**

Source: Statistics Canada, International Travel Survey, Special compilations

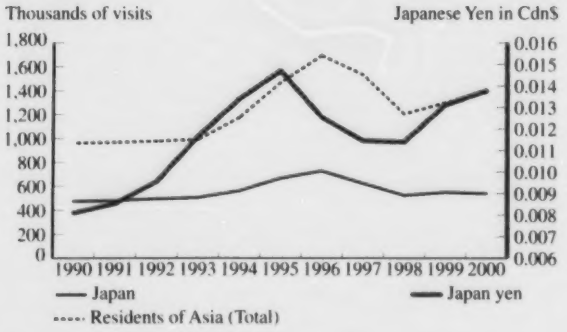
to New Brunswick. Overall from 1990 to 1999, US business travel remained at the same level, although it grew in Ontario, British Columbia, Alberta and Prince Edward Island, while falling in the other provinces.

Travel Between Canada and Countries Other Than the United Sates

Overseas Travel to Canada

Visitors to Canada from overseas countries, from countries other than the US, rose by 4.9 per cent to 4.6 million in 2000, after an increase of 5.2 per cent in 1999. While overall, the number of Asian visitors increased by 6.8 per cent, the number of Japanese visitors fell by 1.9 per cent to 540,095, despite of an increase in the value of the yen. Visitors from South Korea rose sharply again in 2000, up 37.2 per cent to 149,000, following an increase of 50.3 per cent in 1999. The number of visitors from

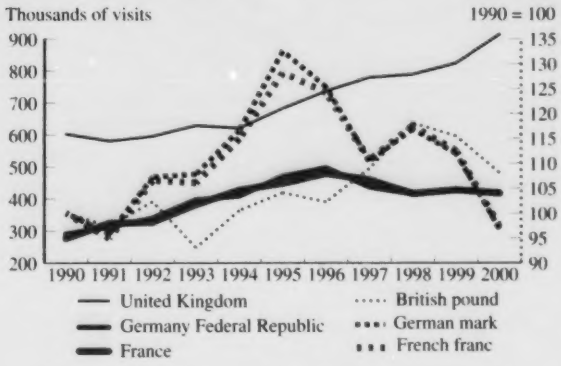
FIGURE 9-11: VISITORS TO CANADA FROM ASIA, 1990 – 2000



Note: Indices for exchange rates are foreign currencies in terms of C$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

FIGURE 9-12: VISITORS TO CANADA FROM MAJOR EUROPEAN COUNTRIES, 1990 – 2000



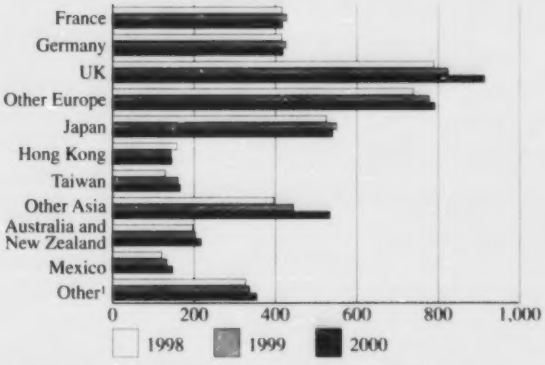
Note: Indices for exchange rates are foreign currencies in terms of C$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

Australia and New Zealand rose 7.1 per cent to 217,000. The number of visitors from Europe increased as well, rising 3.4 per cent overall, but not from all countries. Visitors from the United Kingdom continued the steady increases of the last six years, as the number rose 10.9 per cent in 2000. Other countries showing increases included the Netherlands and Switzerland, whose visits rose 6.5 per cent and 3.2 per cent, respectively. Visitors from France and Germany reversed the increases of 1999, falling 2.5 per cent and 2.1 per cent respectively. These decreases reflected the drop in the value of the French franc and German mark. Visitors from Mexico increased by 10.6 per cent to 146,900 while visitors from South America increased by 6.2 per cent to 125,100.

FIGURE 9-13: VISITORS TO CANADA FROM COUNTRIES OTHER THAN THE UNITED STATES, 1998 – 2000

(Thousands)



1 St. Pierre & Miquelon, Caribbean, Mexico and Oceania (including Australia).

Source: Statistics Canada, Cat. 66-201

Figures 9-11 and 9-12 show some important exchange rate and international visitor flow information, while Figure 9-13 shows the origin of visitors to Canada from countries other than the United States in recent years.

Distribution of Travel

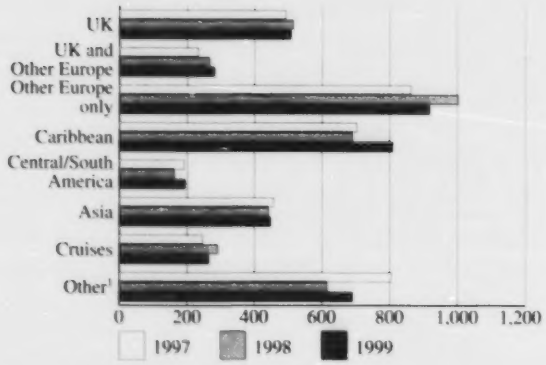
In 1999, one third of overseas visitors to Canada chose Ontario as their destination. British Columbia was the second most popular, with 25 per cent, and Quebec third, with 18 per cent. Alberta was the destination for 14 per cent of visitors and Atlantic Canada for seven per cent, while the remaining three per cent went to Manitoba and Saskatchewan. Visits increased to all provinces except Quebec, where visits fell 3.3 per cent due to a drop in visitors from France. Overseas visitors to Atlantic Canada rose almost 30 per cent in 1999, with most coming from Europe. Figure 9-8 shows the destination by provincial region for overseas visitors staying at least one night.

Canadian Travel Overseas

In 2000, Canadians increased their trips to countries other than the US by 6.2 per cent, up from the less than one per cent increase in 1999. In 1999, trips to Cuba almost doubled, making Cuba the fourth most popular country destination for Canadians after the United Kingdom, Mexico and France. Cruise trips by Canadians were down 9.3 per cent after increasing by 18.8 per cent in 1998 and 27.6 per cent 1997. Trips to the United Kingdom remained constant, while trips to most European countries declined. Trips to Asia increased by about 1.5 per cent. Figure 9-14 shows which countries Canadians travelled to other than the United States from 1997 to 1999.

FIGURE 9-14: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1997 – 1999

(Thousands)



1 Mexico, Caribbean, Central and South America and Africa.

Source: Statistics Canada, Cat. 66-201

Overseas Travel: Purpose and Mode of Travel

Pleasure is the most common reason for overseas travel. As shown in Table 9-7, pleasure trips accounted for 49.6 per cent of travel to Canada by residents of countries other than the United States in 1999. A decade ago, this figure was 45 per cent. On the other hand, Canadian travellers returning to Canada from countries other than the United States gave pleasure as the reason for 59.8 per cent of their trips in 1999, up from 57 per cent for the past five years and almost regaining the 61.1 per cent level of 1990.

TABLE 9-7: PURPOSE OF TRIP FOR OVERSEAS TRAVEL, 1990 AND 1999

(Per cent of person-trips)

	Canadians		*Non-Residents (Non-U.S)*	
Trip Purpose	*1990*	*1999*	*1990*	*1999*
Business	14.3	16.1	18.1	17.6
Visiting friends and relatives	18.4	17.7	31.8	27.8
Pleasure	61.1	59.8	45.3	49.6
Other	6.3	6.4	4.8	5.1
Total	100.0	100.0	100.0	100.0

Source: Statistics Canada, Cat. 66-201

For travellers from overseas countries, the increase in pleasure trips has come at the expense of trips to visit friends and relatives, which made up 27.8 per cent of the trips in 1999, down from 31.8 per cent in 1990. Their trips for business have remained at around 18 per cent and trips for other purposes at around five per cent. For Canadians travelling to countries other than the United States, trips for business purposes made up 16.1 per cent of trips in 1999, down by about one per cent from 1998 but still up from the 14.3 per cent of 1990. Trips to visit friends and relatives made up 17.7 per cent of trips in 1999, down from the 18.4 per cent it had been in 1990. Canadian trips for other purposes have remained about six per cent over the 10 year period.

Of the 4.6 million non-resident travellers from countries other than the United States, 82 per cent arrived by air in Canada in 2000. This percentage has risen over the past four years from the 68 per cent it had been between 1990 and 1996. In 2000, 38 per cent of these overseas travellers entered Canada via the United States. Of these, 1.8 million, or 53 per cent, came by air, 43 per cent by land and four per cent by water. In 2000, 16 per cent of Canadians returning by air from countries other than the United States returned via that country, a proportion that has risen slightly in recent years.

TRANSPORTATION INFRASTRUCTURE 10

CN and CPR now account for less than two thirds of the Canadian rail network.
Canada's road network is over 1.4 million kilometres in length.
Canada Port Authorities account for 54 per cent of total port traffic handled,
while 30 airports look after more than 94 per cent of air passenger traffic.
Traffic on the St. Lawrence Seaway was down in 2000.

Transportation infrastructure is vital to the country's economy. It allows people and goods to move across the country as well as to other countries. Transportation infrastructure is made up of a network of roads, railways, airports, ports and waterways that stretch from coast to coast and to the Far North.

This chapter gives an overview of events and issues relating to Canada's transportation infrastructure. It presents the most current status of its elements and also addresses some essential incidental services.

RAIL TRANSPORTATION INFRASTRUCTURE

As shown in Table 10-1, the Canadian rail network changed relatively little in aggregate with a reduction of 0.1 per cent in terms of route-kilometres in 2000. Despite this relatively small amount of change in terms of the entire system, ownership again underwent considerable change, with both CN and CPR experiencing reductions in the size of their networks. Most of this rationalization activity on the part of CN and CPR, however, was accomplished by the transfer of operations and track to other rail carriers, thus continuing recent trends in the distribution of track ownership and the nature of rail operations.

TABLE 10-1: RAILWAYS IN CANADA, 2000

	2000 owned/ leased route kilometres	*1999 owned/ leased route kilometres*[2]	*Per cent of total (2000)*	*Percentage change over previous year*
CN	19,143	19,617	38.2	(2.4)
CPR	14,068	14,695	28.1	(4.3)
Regional and Shortline Railways[3]	16,189	15,138	32.3	6.9
All Others[3]	691	686	1.4	0.8
Total	50,092	50,135		(0.1)

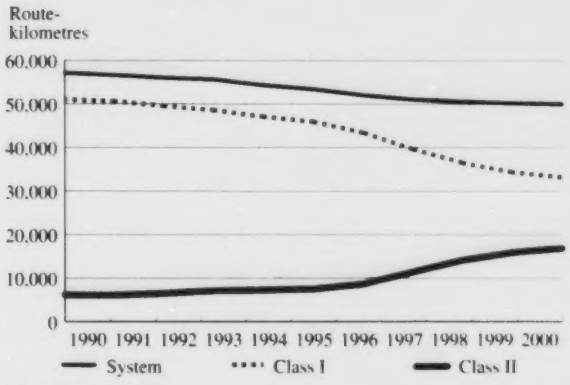
1 1999 trackage revised slightly to reflect improved data.
2 The Quebec Central Railway trackage that had been abandoned during 1994 was transferred to Express Marco during 2000. This will result in an apparent discrepancy in the trackage shown in Table 10-1.
3 Terminal and switching railways, Canadian subsidiaries of US railroads and passenger railways.

Source: Transport Canada

CN and CPR now account for less than two-thirds of the Canadian rail network,[1] while regional and shortline railways now account for almost a third of the entire network.

Figure 10-1 shows the result of rail restructuring on route-kilometres between 1990 and 2000.

FIGURE 10-1: CANADIAN RAIL NETWORK RESTRUCTURING, 1990 – 2000



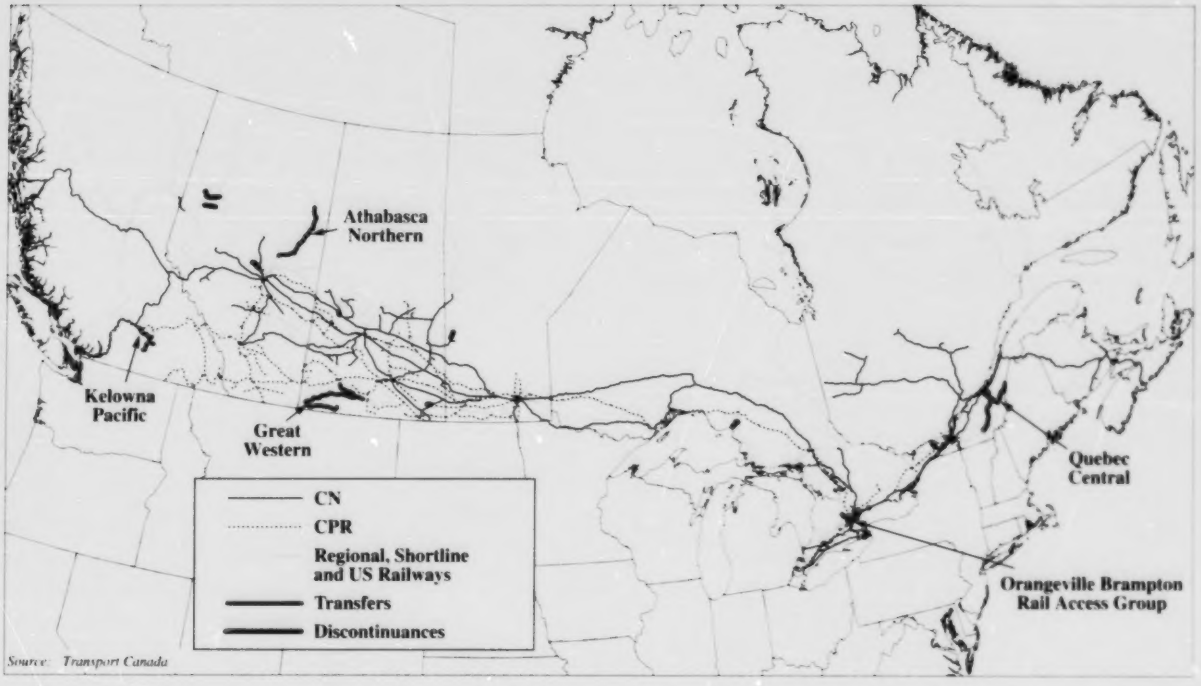
Source: Transport Canada

RATIONALIZATION

Railway rationalization, a term that describes the ways that a railway can deal with track that is no longer economically attractive, encompasses both the discontinuance of operations and the transfer of operations to other rail operators. The driving force

1 In terms of route-kilometres.

FIGURE 10-2: CHANGES IN CANADA'S RAIL NETWORK, 2000



behind rationalization has been the need to reduce a railway's costs and the costs of the services offered. Transfers of lines to other carriers have several advantages: the lines remain in operation, shippers often receive improved service, and the traffic continues to flow to the Class I carrier, thus continuing to generate revenues.

Figure 10-2 illustrates the CN and CPR rationalization activity that occurred in the rail network in 2000.

Lines transferred to other, smaller rail operators are known as shortline railways. On several occasions, CN and CPR have formed what are known as "internal shortlines," that share many of the characteristics of lines transferred to other operators. While the objectives are the same as with transfers to other operators, internal shortlines usually involve special agreements with labour to facilitate their development.

Railways must provide notice of their intentions by filing plans for their proposed network rationalization for the forthcoming three-year period. In addition, a process provided for under the Act requires that lines proposed for discontinuance be offered for sale to other potential operators or, failing any expression of interest, to other levels of government. Only after all such avenues have been exhausted, are lines permitted to discontinue service.

TABLE 10-2: CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 2000

(Route-kilometres)

		British Columbia	*Alberta*	*Saskatchewan*	*Manitoba*	*Ontario*	*Quebec*	*New Brunswick*	*Nova Scotia*	*Territories*	*Total*
Discontinuances	CPR	510	581	982	137	390	784	429	242	0	4,056
	CN	5	381	648	879	1,394	499	79	227	87	4,199
	Total	516	962	1,630	1,016	1,784	1,283	508	469	87	8,255
Transfers	CPR	365	216	682	0	967	700	191	85	0	3,206
	CN	168	2,103	544	1,727	937	1,015	328	378	122	7,323
	Total	534	2,318	1,225	1,727	1,904	1,715	519	463	122	10,529
Total	CPR	876	797	1,664	137	1,357	1,484	620	328	0	7,262
	CN	174	2,484	1,192	2,606	2,332	1,514	407	604	210	11,512
	Total	1,049	3,280	2,856	2,744	3,688	2,998	1,027	932	210	18,784

Source: Transport Canada

TABLE 10-3: CN AND CPR RATIONALIZATION BY PROVINCE, 2000

(Route-kilometres)

		British Columbia	*Alberta*	*Saskatchewan*	*Manitoba*	*Ontario*	*Quebec*	*New Brunswick*	*Nova Scotia*	*Territories*	*Total*
Discontinuances	CPR	0	7	17	0	0	0	0	0	0	24
	CN	0	164	0	32	2	0	0	0	0	199
	Total	0	172	17	32	2	0	0	0	0	223
Transfers	CP	0	0	531	0	55	0	0	0	0	586
	CN	168	0	0	0	86	0	0	0	0	255
	Total	168	0	531	0	141	0	0	0	0	841
Total	CP	0	7	548	0	55	0	0	0	0	610
	CN	168	164	0	32	88	0	0	0	0	453
	Total	168	172	548	32	144	0	0	0	0	1,064

Note: Excludes spur kilometres.

Source: Transport Canada

Of the roughly 1,100 kilometres of line rationalized in 2000, 79 per cent was transferred to other operators. The balance, approximately 225 kilometres of line, was discontinued in 2000, representing a continuation of the declining annual trend in discontinuances that has prevailed since 1996. In a reversal of past patterns, CPR showed a greater amount of rationalization activity than CN during 2000. CN, however, had about 90 per cent of the discontinuances during the year, while CPR had about 70 per cent of the transfers.

Table 10-3 shows rationalization activity by province, in 2000.

Regionally, about 70 per cent of discontinuances occurred in Alberta, while about 63 per cent of line transfers to other operators occurred in Saskatchewan. Over 85 per cent of rationalization activity during 2000 occurred in western Canada. About 75 kilometres (almost 50 per cent) of the discontinued lines in Alberta during 2000 had previously been transferred to RailLink Mackenzie Northern (RailAmerica) and Alberta RailNet Inc. in 1998 and 1999, respectively. Unfortunately, the discontinued lines had insufficient traffic to be economically viable. Another track segment in northern Alberta was transferred by RailLink Lakeland & Waterways (RailAmerica) to Athabasca Northern Railway. This line had been transferred from CN two years ago.[2]

In another development, several lines in the eastern townships of Quebec were purchased by Express Marco from CPR — six years after they had been discontinued. Data for prior years were not adjusted in this case and the trackage involved (425 kilometres) was not included in Table 10-3, although it was reflected in Table 10-2 under CPR discontinuances in Quebec since the discontinuances involved occurred during the 1990's. Figure 10-2 illustrates the distribution of rationalization activity during 2000, as well as the names of the new carriers to which the track was transferred.

As shown in Table 10-2, since 1990, about 18,800 kilometres of track have been either transferred or discontinued by CN and CPR. About 11,500 kilometres, or 55 per cent of the trackage was transferred to other carriers and the balance discontinued. CN accounted for about 70 per cent of the transfers during this period, while discontinuances were more or less evenly distributed between the two carriers. Ontario experienced the greatest amount of rail line discontinuance (22 per cent) since 1990, followed by Saskatchewan (20 per cent). Over 22 per cent of the track transferred since 1990 occurred in Alberta, with approximately 17 per cent each in Manitoba, Ontario and Quebec.

THREE-YEAR PLANS

Canadian railways falling under federal government jurisdiction must file plans of their rationalization intentions for the forthcoming three-year period. These plans are usually updated on a frequent basis. The most current CN and CPR plans are dated November 20, 2000, and September 26, 2000, respectively.

TABLE 10-4: PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE

(Route-kilometres)

		BC	*Alta.*	*Sask.*	*Man.*	*Ont.*	*Que.*	*NB*	*Total*
Discontinuances	CPR	9	218	98	58	181	2	13	579
	CN	0	0	140	0	191	10	0	341
	Total	9	218	238	58	372	12	13	920
Transfers	CPR	0	0	407	112	251	39	0	809
	CN	0	0	0	0	131	0	0	131
	Total	0	0	407	112	382	39	0	940

Source: Transport Canada

2 Data for prior years were revised to avoid double-counting.

As shown in Table 10-4, CN and CPR propose to discontinue approximately 920 kilometres of track in the balance of their current three-year plans. About 25 per cent of proposed discontinuances are in Alberta and Saskatchewan, while 40 per cent are in Ontario. Approximately 940 kilometres of track are proposed for transfer, with about 43 per cent slated to occur in Saskatchewan and 40 per cent in Ontario.

Since provincially regulated railways are not required to file similar rationalization plans, little is known of the intentions of these carriers, although past practices would suggest that very little of the system owned or operated by provincially regulated carriers will be discontinued.

ROAD TRANSPORTATION INFRASTRUCTURE

CLASSIFICATION OF ROAD NETWORKS

Canada has a dense network of streets and highways that covers virtually every part of the country. Roads are built to different standards depending on the type of traffic and the intended use. In general, they can be classified into four broad categories.

- **Local roads** — Local roads provide access to private property or close-proximity public facilities in urban and rural areas. These roads are characterized by short trip lengths, low volume, low speeds and restricted through-traffic movement. A good example is a street in an urban subdivision. A large proportion of rural local roads are gravel-surfaced.
- **Secondary highways/urban collector streets** — Secondary highways provide access to smaller towns and cities and links to the primary arterial system. Movement is largely restricted to the county as opposed to the provincial level. A good example of a secondary rural highway is any type of county or regional road. In an urban setting, collector streets provide access to residential neighbourhoods funnelling traffic from local roads to higher volume roads.
- **Primary highways/urban arterial streets** — Primary highways handle corridor movements between the larger urban areas in Canada. They are the principal means of interprovincial and intraprovincial movement. They typically handle larger traffic volumes than secondary highways and are characterized by much longer trip lengths. Examples include Highway 1 in Saskatchewan, Highway 97 in British Columbia, Highway 17 in Ontario, Highway 138 in Quebec, and Highway 2 in New Brunswick. Urban arterial streets carry through-traffic and most of the traffic entering or leaving urban areas. They provide continuity for all rural primary highways that meet at urban boundaries.
- **Freeways** — These are high-volume controlled-access highways in urban and rural areas that permit long-distance movements between major population centres. Highways of this type are characterized by multiple lanes and high speeds, and are restricted to long-distance through movements. Examples include Highway 401 and Autoroute 20, which connect the dense population areas in southern Ontario and central Quebec.

This chapter calculates the length of road networks in two different ways.

- **Route-kilometres** — The simplest method of measurement uses route-kilometres to measure the total length of a road segment between a start and end point without regard for the number of lanes. The measurement is equivalent to the driving distance. Using this definition, a kilometre of multi-lane road would count the same length as a kilometre of two-lane road. This concept is used in this chapter's section on "Primary Provincial/Territorial Highways."
- **Two-lane equivalent route-kilometres** — This measure calculates route-kilometres on a two-lane highway basis. For example, a one-kilometre section of four-lane highway would count as two kilometres on a two-lane equivalent basis, since the facility has a pair of two-lane highways in each direction. A one-kilometre section of an eight-lane highway would count as four route-kilometres. This concept is used to compute the extent of the Canadian road network in the following section, "Canada's Road Network."

CANADA'S ROAD NETWORK

As shown in Table 10-5, Canada's road network is over 1.4 million kilometres in length (two-lane equivalent basis). Over 1.2 million kilometres, or 85 per cent of the total network, are classified as local roads. The balance, about 200,000 kilometres, is made up of primary and secondary highways under provincial/territorial jurisdiction and major urban arterial and collector roads under municipal/local control.

The largest networks are in the Prairie provinces, which together account for over 40 per cent of the local and total network. Saskatchewan has the single largest network, at over 256,000 kilometres, with most of these roads being unpaved. Ontario and Quebec, with their dense populations, possess nearly two thirds of the freeway network.

TABLE 10-5: LENGTH OF ROADS IN CANADA, 1998

	Two-lane equivalent kilometres ('000s)					Percentage distribution				
	Local street/ rural road	*Urban collector/ Secondary provincial highway*	*Urban arterial/ Primary provincial highway*	*Freeway*	*Total*	*Local street/ rural road*	*Urban collector/ Secondary provincial highway*	*Urban arterial/ Primary provincial highway*	*Freeway*	*Total*
Newfoundland	20.2	5.8	1.7	-	27.7	1.7	5.6	1.9	-	1.9
Prince Edward Island	3.6	2.1	0.5	-	6.2	0.3	2.1	0.5	-	0.4
Nova Scotia	43.2	3.1	4.2	0.5	51.0	3.5	3.0	4.7	3.7	3.6
New Brunswick	61.6	6.3	2.2	0.1	70.1	5.0	6.1	2.4	0.6	4.9
Quebec	185.1	12.6	11.3	4.0	212.9	15.2	12.2	12.6	31.2	14.9
Ontario	189.3	28.7	16.5	4.5	239.0	15.5	27.9	18.4	34.9	16.7
Manitoba	95.4	5.6	7.4	0.9	109.4	7.8	5.5	8.3	7.0	7.7
Saskatchewan	223.8	14.4	17.0	0.7	256.0	18.3	14.0	18.9	5.8	17.9
Alberta	191.2	17.7	15.0	1.1	224.9	15.6	17.2	16.7	8.6	15.8
British Columbia	186.1	4.6	10.3	1.0	202.0	15.2	4.5	11.4	8.2	14.2
Yukon	13.5	1.1	2.6	-	17.2	1.1	1.1	2.9	-	1.2
Northwest Territories	8.5	0.9	1.1	-	10.5	0.7	0.9	1.3	-	0.7
Total	**1,221.5**	**102.9**	**89.8**	**12.8**	**1,427.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: dmtiSpatial, Canmap streetfile

Primary Provincial/Territorial Highways

The most significant network for analysing national road transport issues is the network of primary provincial/territorial highways. This network of arterial highways and freeways connects all the major cities and towns in Canada and supports the major east–west and north–south trade corridors. It also includes the National Highway System (NHS), a network of high-volume roads connecting provincial capitals and significant border points with the United States. As Table 10-6 shows, the primary highway network is over 80,000 kilometres long, with about 30 per cent represented by the National Highway System. Ontario, with over 16,000 route-kilometres, has the single largest share of the primary network, or 20 per cent of the total. Saskatchewan follows with 16,000 route-kilometres, or 19 per cent, then Alberta with close to 14,000, or 17 per cent, Quebec with over 11,000, or 14 per cent, and British Columbia with 10,000, or 12 per cent. The five remaining provinces and two territories account for the rest of the network with about 15,000 route-kilometres, or 18 per cent of the total.

Traffic Levels

To get an estimate of annual vehicle-kilometres driven, daily traffic counts (all vehicles taken together) collected by provincial/territorial transport departments are applied to defined sections of road, and the product of volume and distance is aggregated. Table 10-6 reveals that in 1996 over 140 billion vehicle-kilometres were driven on the primary highway network, an annual average of 4,700 vehicles per day. The four largest provinces

TABLE 10-6: TRAFFIC LEVELS ON THE PRIMARY PROVINCIAL HIGHWAY NETWORK, 1996

	Network length (thousands)			*1996 Vehicle-kilometres (billions)*			*Percentage distribution*						*Annual average daily traffic (AADT)*		
							Network length			*Vehicle-kilometres*					
	NHS	*Other*	*Primary*	*NHS*	*Other*	*Primary*	*NHS*	*Other*	*Primary*	*NHS*	*Other*	*Primary*	*NHS*	*Other*	*Primary*
Newfoundland	0.9	-	0.9	1.3	-	1.3	3.9	-	1.1	1.6	-	0.9	3,800	-	3,800
Prince Edward Island	0.1	0.3	0.4	0.2	0.4	0.7	0.5	0.5	0.5	0.3	0.7	0.5	5,200	3,800	4,200
Nova Scotia	0.9	0.6	1.4	2.7	0.9	3.6	3.6	1.0	1.7	3.4	1.4	2.5	8,300	4,300	6,800
New Brunswick	0.9	1.1	2.0	2.3	1.3	3.6	3.9	1.8	2.4	2.9	2.1	2.5	6,700	3,400	5,000
Quebec	3.0	8.5	11.5	19.9	14.9	34.8	12.1	14.6	13.9	25.2	23.4	24.4	18,500	4,800	8,300
Ontario [1]	5.0	11.5	16.5	28.7	23.2	51.9	20.5	19.8	20.0	36.2	36.5	36.3	15,700	5,500	8,600
Manitoba	0.9	6.4	7.3	1.5	3.2	4.7	3.5	11.0	8.8	1.9	5.0	3.3	4,800	1,400	1,800
Saskatchewan	2.1	13.9	16.0	3.1	4.9	8.0	8.6	23.8	19.3	3.9	7.7	5.6	4,000	1,000	1,400
Alberta	3.5	10.2	13.7	8.4	6.4	14.9	14.5	17.5	16.6	10.6	10.1	10.4	6,500	1,700	3,000
British Columbia	5.4	4.8	10.2	10.8	8.4	19.2	22.0	8.3	12.3	13.6	13.1	13.4	5,500	4,800	5,200
Yukon	1.1	0.7	1.8	0.2	0.1	0.3	4.4	1.2	2.2	0.3	0.1	0.2	600	300	500
Northwest Territories	0.6	0.2	0.8	0.1	0.0	0.1	2.4	0.4	1.0	0.1	0.0	0.1	300	50	300
Canada	**24.3**	**58.2**	**82.5**	**79.3**	**63.8**	**143.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**8,900**	**3,000**	**4,700**

Notes: NHS = National Highway System.
Network length is in terms of route-kilometres.
1 Vehicle-km for Ontario are estimated.

Source: Traffic information provided by provincial/territorial highway departments

accounted for nearly 85 per cent of the total. Ontario, with more than 50 billion vehicle-kilometres, accounted for over one third of the total, while Quebec, with nearly 35 billion vehicle-kilometres, accounted for one quarter. These provinces were followed by British Columbia, with nearly 20 billion vehicle-kilometres, or more than 13 per cent of the total, and Alberta, with almost 15 billion, or 10 per cent. The remaining eight jurisdictions generated the balance, with a little over 20 billion vehicle-kilometres, or 15 per cent.

The busiest primary highways were in Ontario and Quebec, where average volumes exceeded 8,000 vehicles per day. The next busiest system was Nova Scotia, whose 100 series highways averaged nearly 7,000 vehicles per day. All other jurisdictions had daily volumes at or below 5,000 vehicles per day.

Table 10-6 also illustrates how concentrated motor vehicle travel is on the National Highway System portion of the primary system. Although it makes up only

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Intelligent transportation systems (ITS) encompass a broad range of diverse technologies applied to transportation. Differing from one application to another, ITS work to make transportation safer, more efficient, more reliable and environmentally friendlier, without necessarily having to physically alter existing infrastructure. The range of technologies involved includes sensor and control technologies, communications, and computer informatics. ITS cut across several disciplines, such as transportation, engineering, telecommunications, computer science, finance, electronic commerce and manufacturing. An emerging global phenomenon, ITS benefit both public and private sectors.

Over the years, several ITS applications have been implemented within both road and transit systems. Some of the most recognized applications include the Highway 401 and Queen Elizabeth Way COMPASS Freeway Traffic Management Systems, the Highway 407 Electronic Toll Route, and the NATAP (North American Trade Automation Prototype) automated border crossing test projects.

TRANSPORT CANADA'S STRATEGY:

Now in its second year of implementation, Transport Canada's ITS Strategy is intended to stimulate the development and deployment of ITS in Canada. The goals are to maximize the use and efficiency of existing transportation infrastructure and to meet future mobility needs more responsibly. Recognizing that the federal government cannot deliver this strategy alone, Transport Canada encourages new partnerships among all levels of government, the private sector, academia and the Canadian public.

STATUS OF CANADA'S ITS PLAN FOR 2000

1. **Partnerships for Knowledge** — *The Essential Building Block*
   Transport Canada, ITS Canada and local ITS stakeholders are into the second year of a three-year partnership. They completed the remaining two of five regional ITS information sessions (in Montreal and in Moncton) during 2000.

2. **Developing Canada's ITS Architecture** — *A Solid Foundation*
   A Canadian ITS architecture compatible with the US architecture was developed. This architecture provides a blueprint for integrating systems to ensure that ITS applications will be able to communicate with each other.

   On October 13, 2000, Canada's Minister of Transport and the US Secretary of Transportation signed a Memorandum of Understanding (MOU) to enhance collaboration on surface transportation matters. The MOU promotes, among other things, increased collaboration to advance ITS architecture, standards and joint deployment initiatives.

3. **A Multimodal ITS Research and Development (R&D) Plan** — *Fostering Innovation*
   In March 2000, Transport Canada, in partnership with the private and public sectors and academia, held its preliminary stakeholder consultation to prepare a five-year R&D Plan. The purpose of the plan is to support private-sector innovation and technology development and ensure that ITS technologies lead to safer and more efficient, accessible and sustainable transportation systems.

4. **Deployment and Integration of ITS Across Canada** — *Moving Forward*
   A call for proposals under the ITS Deployment and Integration Plan was launched on March 9, 2000. Proposals were received for cost-shared funding from the public, not-for-profit and academic sectors (maximum of $250,000 per project), and from the private sector (maximum $100,000 per project).

   Of the 75 proposals submitted, 19 projects were selected for cost-shared funding on September 28, 2000, for a total of approximately $3 million. From the projects funded, Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Manitoba, Saskatchewan, and the Yukon will receive funds to develop ITS strategic plans.

5. **Strengthening Canada's ITS Industry** — *Global Leadership*
   Canada continues to search for export opportunities in growing international markets. In 2000, Canadian missions went to Japan, Germany, China, Brazil and Italy, among other countries, to position Canada's ITS industry and develop export opportunities for Canadian ITS firms. Canada continues to work on the international front through participation in the ITS World Congress, and attended the most recent congress held in Torino, Italy, in November 2000.

Further details on funded initiatives and other ITS developments can be found at Transport Canada's Web site at http://www.its-sti.gc.ca.

30 per cent of the primary network, the National Highway System accounts for 55 per cent of the traffic. Its annual average daily traffic (AADT) was three times that of the rest of the primary system (9,000 AADT versus 3,000 AADT). Some provinces have very low volumes on primary highways outside the National Highway System. Based on AADT, Saskatchewan has only about 1,000 vehicles per day on its non-NHS primary highways, four times less than its NHS highways; Alberta also had similar concentrations, with 6,500 on its NHS highways but only 1,700 on the rest of its system. This pattern also applied in Quebec, which had an average of 18,500 AADT on its NHS highways but less than 5,000 AADT on the rest of its system.

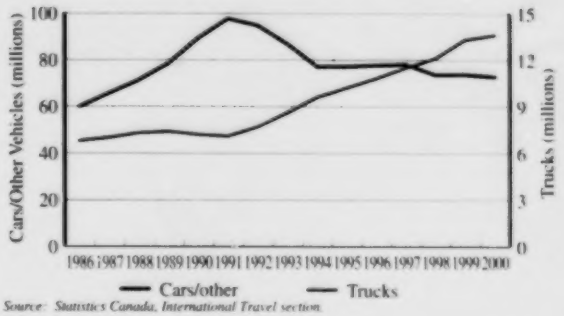
Traffic between Canada and the United States

Vehicle traffic between Canada and the United States has been characterized by two separate trends in car and truck movements since the mid-1980s. As Figure 10-3 shows, car traffic[3] grew very strongly during the late 1980s, peaking at 100 million two-way movements in 1991, but has since declined and levelled off during the mid-1990s. Much of these oscillations in car traffic can be tied to variations in the value of the Canadian dollar relative to the American dollar. Substantial appreciation in the Canadian currency during the late-1980s resulted in unprecedented crossborder shopping activity by Canadians that increased the number of border movements by over 60 per cent between 1986 and 1991.

Car traffic fell below 80 million movements per year and stabilized at approximately 77 million crossings during the mid-1990s as a result of a serious recession in the early 1990s compounded by depreciation in the Canadian dollar. In 1998, car movements fell appreciably for the first time since 1994 to 74 million movements, although this was still about two million trips more than in 1988. By 2000, the number had dropped to less than 73 million movements.

Truck traffic, in contrast, has grown substantially during the 1990s. During the 1980s, truck traffic was stuck at about seven million two-way movements per year, but since the coming into force of the Canada–US Free Trade Agreement in 1989 and then the North America Free Trade Agreement (NAFTA) in 1994, truck volumes have surged forward, increasing at an average annual growth rate of over seven per cent since 1991 to the current level of about 13.6 million crossings per year.

FIGURE 10-3: ANNUAL TWO-WAY VEHICLE COUNTS BETWEEN CANADA AND THE UNITED STATES, 1986–2000



Source: Statistics Canada, International Travel section.

Annual Vehicle Traffic at Major Border Crossings, 1998-2000

Crossborder traffic is heavily concentrated among a small number of sites. As Table 10-7 shows, almost 90 per cent of total truck movements passed through the 20 busiest truck sites in 2000. In terms of total vehicles, the 20 busiest crossings accounted for 73 per cent of total vehicle movements. As Table 10-7 shows, of the 20 busiest truck crossings, the four busiest, and seven in total, were in Ontario: the Ambassador Bridge in Windsor, the Peace Bridge in Fort Erie, the Blue Water Bridge in Sarnia, and the Queenston-Lewiston Bridge in Niagara Falls alone handled 7.5 million trucks in 2000, or 55 per cent of the total. British Columbia and Quebec each had four crossings in the top 20, with their largest crossings, Pacific Highway and Lacolle, rounding out the top 6. New Brunswick had two crossings in the top 20 and the Prairie provinces had one crossing each in the top 20.

MARINE TRANSPORTATION INFRASTRUCTURE

Ports

Canada's major ports are vital links in the national transportation system: they supplement the railways and roads that serve Canadians travelling for business or pleasure, and are essential for transporting the nation's goods for export or import. The infrastructure that supports these ports includes marine terminals that contain a variety of facilities and organizations related to

3 The car traffic includes a very small number of crossings by buses and other non-commercial vehicles. These other vehicles account for less than 0.4 per cent of the "car" total.

TABLE 10-7: TWENTY LARGEST BORDER CROSSINGS FOR TRUCKS, 1998-2000

		Annual two-way traffic volumes (millions)								*Distribution (per cent)*					
		------- *Trucks* ------			*Rank*	------ *All vehicles* ---			*Rank*	------ *Trucks* ------			---- *All vehicles* ----		
Crossing	*Province*	*1998*	*1999*	*2000*	*2000*	*1998*	*1999*	*2000*	*2000*	*1998*	*1999*	*2000*	*1998*	*1999*	*2000*
Ambassador Bridge – Windsor	Ontario	3.0	3.4	3.5	1	11.7	12.4	12.3	1	24.7	25.9	25.7	13.6	14.3	14.2
Blue Water Bridge – Sarnia	Ontario	1.3	1.4	1.5	2	5.1	5.5	5.9	5	10.6	10.7	10.9	6.0	6.3	6.8
Peace Bridge – Fort Erie	Ontario	1.4	1.5	1.5	3	7.6	8.0	8.2	3	11.7	11.4	10.7	8.9	9.2	9.5
Queenston–Lewiston Bridge	Ontario	0.9	1.0	1.0	4	4.4	4.4	4.5	6	7.4	7.3	7.7	5.2	5.0	5.2
Pacific Highway	British Columbia	0.8	0.9	0.9	5	7.2	6.9	6.9	4	6.5	6.5	6.4	8.4	8.0	8.0
Lacolle	Quebec	0.8	0.9	0.8	6	2.6	2.8	2.8	8	6.5	6.4	5.9	3.1	3.2	3.2
Lansdowne	Ontario	0.4	0.5	0.5	7	1.6	1.7	1.8	12	3.6	3.8	3.9	1.9	2.0	2.0
Emerson	Manitoba	0.3	0.3	0.4	8	0.8	0.8	0.8	21	2.7	2.6	2.7	0.9	0.9	1.0
Phillipsburg	Quebec	0.3	0.3	0.3	9	1.0	1.1	1.2	18	2.1	2.2	2.3	1.2	1.3	1.4
Rock Island	Quebec	0.2	0.2	0.3	10	1.3	1.4	1.5	16	1.8	1.8	2.0	1.6	1.6	1.7
Coutts	Alberta	0.2	0.2	0.3	11	0.6	0.6	0.6	23	1.7	1.8	1.9	0.7	0.7	0.7
Beauce	Quebec	0.1	0.1	0.2	12	0.3	0.3	0.4	33	1.0	1.0	1.4	0.4	0.4	0.5
Detroit–Windsor Tunnel	Ontario	0.2	0.2	0.2	13	9.4	9.6	8.6	2	2.0	1.5	1.3	11.0	11.1	10.0
Woodstock	New Brunswick	0.1	0.1	0.2	14	0.7	0.7	0.7	22	1.1	1.1	1.3	0.8	0.8	0.9
Aldergrove	British Columbia	0.1	0.1	0.1	15	1.4	1.4	1.4	17	0.9	0.9	1.0	1.6	1.6	1.6
Sault Ste. Marie	Ontario	0.1	0.1	0.1	16	2.7	2.6	2.5	9	1.2	1.1	1.0	3.1	3.0	2.9
North Portal	Saskatchewan	0.1	0.1	0.1	17	0.3	0.3	0.3	35	1.2	1.0	1.0	0.4	0.3	0.3
Huntingdon	British Columbia	0.1	0.1	0.1	18	1.8	1.6	1.6	14	1.0	1.0	0.9	2.1	1.8	1.8
Milltown	New Brunswick	0.1	0.1	0.1	19	0.8	0.8	0.9	20	0.7	0.6	0.8	0.9	0.9	1.0
Kingsgate	British Columbia	0.1	0.1	0.1	20	0.2	0.3	0.3	37	0.7	0.6	0.7	0.3	0.3	0.3
Top-20 (ranked by trucks)		**10.8**	**11.8**	**12.1**		**61.7**	**63.2**	**63.1**		**88.9**	**89.1**	**89.3**	**71.9**	**72.7**	**73.1**
Total		**12.1**	**13.3**	**13.6**		**85.7**	**86.9**	**86.4**							

Source: International Travel section, Statistics Canada and other unpublished statistics

the loading and unloading of vessels berthed at the wharf. Port authorities operate some of these marine terminals, but often they are owned and operated by independent companies that rent space from the port.

THE PORT SYSTEM

Under the National Marine Policy announced in December 1995, Canada's ports system has undergone reorganization aimed at instilling commercial discipline in port operations. The federal government has moved out of the direct operation of ports, giving local users more say in the port services they pay for and receive. The National Marine Policy was implemented under the *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998. The policy calls for three categories of ports:

- Canada Port Authorities
- regional/local ports
- remote ports.

The *Canada Marine Act* has created a National Ports System made up of independently managed Canada Port Authorities (CPAs). The authorities are considered self-sufficient ports that are critical to domestic and international trade. They include former Ports Canada local port corporations, most of the former Canada Ports Corporation's major divisional ports, and most former harbour commissions.

To date, 17 of the 18 ports designated to become Canada Port Authorities have received their CPA status through the issuance of letters patent, and their boards of directors have been established. The implementation dates were as follows:

- Halifax, Montreal and Vancouver on March 1, 1999
- Fraser River, Prince Rupert, Quebec, Saguenay, Saint John, Sept-Îles, St. John's and Trois-Rivières on May 1, 1999
- Toronto on June 8, 1999
- Nanaimo, North Fraser, Port Alberni, Thunder Bay and Windsor on July 1, 1999.

Canada Port Authority status for the Port of Hamilton, the last remaining port to be designated as a CPA, will be established once it completes the letters patent process, expected in the spring of 2001. In addition to the original 18 ports listed in the *Canada Marine Act*, Transport Canada received applications for CPA status from two additional ports: the Port of Belledune, a former divisional port of the Canada Ports Corporation; and the Oshawa Harbour Commission. The Minister granted the Belledune Port Authority Canada Port Authority status, through the issuance of letters patent, on March 29, 2000, and has approved the initiation of the CPA implementation process for the Oshawa Harbour Commission. It is expected that Oshawa will complete the letters patent process and receive Canada Port Authority status in early 2001.

The Canada Port Authorities include 11 of the 14 ports formerly defined as Ports Canada, and seven of the nine ports formerly defined as Harbour Commissions. Table 10-8 summarizes the status of these major ports and the date the CPA was created.

Transport Canada is monitoring the compliance of CPAs with the *Canada Marine Act* and their respective letters patent.

The Canada Ports Corporation was dissolved on November 1, 2000. During the implementation phase, it was kept open with minimal staff to ensure that all ports had been transferred. The Port of Prescott was transferred to the Township of Edwardsburgh on October 11, 2000, and Ridley Terminals Incorporated became a parent Crown corporation on November 1, 2000, upon the dissolution of the Canada Ports Corporation.

On March 1, 1999, Part II of the *Canada Marine Act* came into force for existing public ports. Under the National Marine Policy, the majority of ports under the control and administration of Transport Canada were designated as regional/local. These ports range from operations that support significant local and regional commercial activity to very small facilities with little or no commercial traffic.

TABLE 10-8: CLASSIFICATION OF MAJOR PORTS

(Status as of December 31, 2000)

Year	*Prior to 1999*		*Canada Port Authority Status Effective Date*
	Canada Ports	*Harbour Commissions*	
Halifax	X		March 1, 1999
Montreal	X		March 1, 1999
Vancouver	X		March 1, 1999
Fraser River		X	May 1, 1999
Prince Rupert	X		May 1, 1999
Quebec City	X		May 1, 1999
Saguenay	X		May 1, 1999
Saint John	X		May 1, 1999
Sept-Îles	X		May 1, 1999
St. John's	X		May 1, 1999
Trois-Rivières	X		May 1, 1999
Toronto		X	June 8, 1999
Nanaimo		X	July 1, 1999
North Fraser		X	July 1, 1999
Port Alberni		X	July 1, 1999
Thunder Bay		X	July 1, 1999
Windsor		X	July 1, 1999
Belledune	X		March 29, 2000
Hamilton[1]		X	
Oshawa[2]		X	
Port Colborne[3]	X		
Prescott[4]	X		
Ridley Terminals[4]	X		

1 Designated to become Canada Port Authority.
2 Applications for Canada Port Authority status under consideration.
3 Divested to private entities.
4 Became a parent Crown corporation in 2000 upon the dissolution of the Canada Ports Corporation.

Source: Port Corporations and Port Property, Transport Canada

Whether a port supports an isolated community or several large industries, Transport Canada's operational role is normally limited to enforcing regulations regarding public port and public port facility use, monitoring port operations, and collecting user fees. Services such as cargo handling are supplied by the private sector.

Transport Canada began commercializing its public ports before the introduction of the *Canada Marine Act*, as legislative authority was not required for this process to begin. Under the National Marine Policy, regional/local ports are being transferred to other federal departments or to provincial governments, municipal authorities, community organizations or private interests over a six-year period ending in 2001/02. Public ports are also being deproclaimed once Transport Canada has relinquished the last of its ownership interests, including the harbour beds as appropriate, to a new owner. Once the public port or public port facilities have been deproclaimed, Transport Canada no longer has the authority to regulate activities in these waters. For this reason, federally appointed harbour masters, whose prime responsibilities are to administer public port regulations, are being removed once the ports are deproclaimed.

As of December 31, 2000, 382 of the 549 public ports and public port facilities under Transport Canada's control and administration have been transferred, deproclaimed, demolished, or have had the department's interests terminated.

Table 10-9 summarizes the changes that have taken place in responsibility for ports operations since 1996.

TABLE 10-9: PORTS NO LONGER UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA, 1996 – 2000

Year	*Transferred*[1]	*Deproclaimed*[2]	*Demolished/ Closed*	*Transport Canada Interests Terminated*	*Total*
1996	78	199	0	0	277
1997	32	0	2	0	34
1998	10	0	0	1	11
1999	11	12	1	10	34
2000	24	0	0	2	26
Total	**155**	**211**	**3**	**13**	**382**

1 Numbers include remote ports and sites where harbour beds have not yet been divested.
2 Does not include deproclamation of 26 harbours found during subsequent archival research, nor deproclamation of 18 public harbours located adjacent to port facilities that had already been divested.

Source: Port Corporations and Port Property, Transport Canada

As of December 31, 2000, a total of 167 regional/local and remote ports and port facilities remain under Transport Canada control. An additional 15 sites remain where the public port has not yet been deproclaimed

FIGURE 10-4: CANADA PORT AUTHORITY PORTS

Source: Transport Canada

because the harbour bed has not yet been divested. Table 10-10 summarizes the regional distribution of the ports administered by Transport Canada from 1995 to 2000.

TABLE 10-10: NUMBER OF SITES UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA BY PROVINCE AND YEAR, 1995 – 2000

Province	*1995*[1]	*1996*	*1997*	*1998*	*1999*	*2000*
Newfoundland	58	40	20	19	18	18
New Brunswick	45	9	7	6	3	3
Nova Scotia	128	35	35	31	18	12
Prince Edward Island	31	4	4	4	4	4
Quebec	73	48	46	46	45	36
Ontario	54	37	30	25	20	19
Manitoba	2	2	2	2	2	2
Saskatchewan	4	4	4	4	4	4
Alberta	3	1	1	1	1	1
British Columbia	105	92	89	89	78	68
Northwest Territories	46	0	0	0	0	0
Total	**549**	**272**	**238**	**227**	**193**	**167**

1 Last year prior to the National Marine Policy

Source: Port Corporations and Port Property, Transport Canada

Of the 155 public ports and public port facilities transferred to date, 39 sites were transferred to provincial governments, 64 to other federal departments, and 52 to local interests. As previously mentioned, 15 of these 155 sites have yet to have their public port status deproclaimed.

Since the start of the program, 255 public ports have been deproclaimed overall. Of these, 26 harbours were found during subsequent archival research and are therefore not included in the original 549 port sites identified in the National Marine Policy. In addition, 18 of these public ports were adjacent to port facilities that had already been transferred.

Transport Canada is monitoring local port entities for compliance with the terms and conditions of any contributions that may have been received by these entities.

The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities, unless local interests express a willingness to assume ownership of such port facilities. In 2000, one remote port in British Columbia was transferred to a local interest group, bringing the total number of remote ports transferred to 27. Also in 2000, the Port of Cap-aux-Meules, Quebec, was changed from a regional/local port to a remote port following a review of the port facility's classification under the terms of the National Marine Policy. As a result, Transport Canada continues to administer 34 remote ports nationwide (10 in Quebec, three in Ontario, one in Manitoba, and 20 in British Columbia).

Table 10-11 shows the divestiture status of regional/local and remote ports as well as the number of ports remaining on a regional basis.

TABLE 10-11: DIVESTITURE STATUS OF TRANSPORT CANADA REGIONAL/LOCAL AND REMOTE PORTS

(Status as of December 31, 2000)

Region	*Transferred*[1]	*Deproclaimed*[2]	*Demolished/ Closed*	*Transport Canada Interests Terminated*	*Remaining*	*Total*
Pacific	22	10	2	3	68	105
Prairie/Northern	47	1			7	55
Ontario	16	17		2	19	54
Quebec	13	23	1		36	73
Maritimes	20	157		8	19	204
Newfoundland	37	3			18	58
Total	**155**	**211**	**3**	**13**	**167**	**549**

1 Numbers include remote ports and sites where harbour beds have not yet been divested.
2 Does not include deproclamation of 26 harbours found during subsequent archival research, nor deproclamation of 18 public harbours located adjacent to port facilities that had already been divested.

Source: Port Corporations and Port Property - AHPA, Transport Canada

TABLE 10-12: CANADA PORT AUTHORITIES FINANCIAL PROFILES, 1999

(Millions of dollars)

Financial Information	*Vancouver*	*Montreal*	*Halifax*	*Québec City*	*Saint John*	*St. John's*	*Prince Rupert*	*Port Alberni*	*Fraser River*[1]
Operating revenues	76.820	58.872	15.804	11.713	10.406	3.215	6.383	3.183	15.182
Operating expenses[2]	54.761	57.660	12.821	11.912	9.523	2.800	6.009	3.166	14.301
Operating income	22.059	1.212	2.983	(0.200)	0.883	0.415	0.374	0.018	0.881
Ratio: Expenses/Revenues (per cent)	0.713	0.979	0.811	1.017	0.915	0.871	0.941	0.994	0.942
Net income	17.868	4.457	3.447	2.556	1.635	1.002	1.219	0.342	0.806
Net fixed assets	398.909	160.664	82.640	44.227	57.662	13.203	95.247	8.634	104.782
Ratio: Net income/Net fixed assets (per cent)	0.045	0.028	0.042	0.058	0.028	0.076	0.013	0.040	0.008
Investment income	1.162	6.435	0.092	1.763	0.750	0.298	0.407	0.314	0.566
Funds from operations	13.548	15.779	5.785	6.103	3.228	1.294	2.034	0.941	(0.427)
Funds used in investing activities	5.564	23.046	7.623	18.759	5.742	2.071	1.832	(0.162)	(25.799)
Acquisition of fixed assets, net	5.426	9.354	7.623	9.443	1.795	2.071	2.410	(0.162)	15.170
Total assets	453.470	273.065	88.654	74.869	72.356	19.540	106.111	16.853	130.079
Equity	380.991	250.911	76.226	24.618	68.778	18.807	104.966	16.266	87.452
Contributed Capital	150.259	247.210	50.857	0.197	61.659	18.422	84.612	3.158	77.195
Retained Earnings[4]	230.732	3.701	25.369	24.421	7.119	0.385	20.354	13.109	10.257

Financial Information	*Nanaimo*	*North Fraser*	*Thunder Bay*	*Toronto*	*Windsor*	*Saguenay*	*Sept-Îles*	*Trois-Rivières*	***Total All CPAs***[3]
Operating revenues	6.142	3.474	3.048	12.243	1.155	1.189	7.952	3.227	**240.007**
Operating expenses[2]	6.273	3.492	2.662	17.410	0.952	0.965	4.616	2.797	**212.117**
Operating income	(0.131)	(0.018)	0.386	(5.167)	0.203	0.225	3.337	0.430	**27.890**
Ratio: Expenses/Revenues (per cent)	1.021	1.005	0.873	1.422	0.825	0.811	0.580	0.867	**0.884**
Net income	0.280	0.159	1.051	(3.358)	0.374	0.845	1.526	1.807	**36.017**
Net fixed assets	23.070	1.906	15.987	43.242	1.483	4.287	37.705	11.786	**1,105.432**
Ratio: Net income/Net fixed assets (per cent)	0.012	0.083	0.066	(0.078)	0.252	0.197	0.040	0.153	**0.033**
Investment income	0.385	0.177	0.647	1.809	0.170	0.590	0.590	1.057	**17.212**
Funds from operations	2.442	0.221	1.508	(2.531)	0.916	1.043	3.405	2.420	**57.708**
Funds used in investing activities	1.289	1.376	1.567	(1.850)	3.820	2.637	29.205	1.880	**78.601**
Acquisition of fixed assets, net	0.253	1.376	(0.057)	2.284	0.012	0.059	3.578	2.270	**62.904**
Total assets	34.945	10.610	28.267	63.019	6.986	14.850	46.754	29.370	**1,469.797**
Equity	33.246	9.816	27.918	55.432	6.535	14.594	15.890	28.531	**1,220.978**
Contributed Capital	24.991	6.191	27.231	-	6.232	13.999	14.781	(6.740)	**780.254**
Retained Earnings[4]	8.255	3.625	0.688	55.432	0.303	0.595	1.110	35.271	**440.724**

1 Figures represent 12 month period for year ending April 30, 2000. All other figures represent 1999 calendar year.
2 Includes Gross Revenue Charge and Dividend to Canada.
3 Due to rounding, columns may not add to totals shown.
4 May include previous years as reported in the financial statements.

Source: Port Financial Statements; Port Corporations and Port Property, Transport Canada

As Transport Canada relinquishes its ownership interests in public ports and public port facilities, a growing number of "other" ports are being operated by provincial or municipal governments and private interests. At the end of 2000, there were 133 other ports, including 64 private, 40 provincial and 29 municipal ports. These include sites such as Port Cartier, Quebec, and Nanticoke, Ontario, used to ship large volumes of cargo, and Quyon, Quebec, which is used for an interprovincial ferry service on the Ottawa River.

Financial Performance

Audited financial statements for 2000 are not yet available. As a result, the following results for 1999 are provided for the 17 ports designated as Canada Port Authorities as of December 31, 1999.

Table 10-12 shows revenues, expenses and some key ratios for Canada Port Authorities in 1999. In that year, the CPAs posted total revenues of $240 million, with a net income of $36 million and an operating cash flow of $57.7 million. Among the 17 designated Canada Port Authorities, Vancouver and Montreal accounted for over 56 per cent of the total revenues generated. Four Canada Port Authorities accounted for 64 per cent of total cargo, by volume, handled by CPAs: Vancouver handled 34 per cent, while Montreal, Saint John and Sept-Îles each handled 10 per cent.

The overall operating ratio for the Canada Port Authorities was approximately 88 per cent in 1999, with the individual ratios ranging from 58 to 142 per cent. Except for Sept-Îles (58 per cent) and Vancouver (71 per cent), ratios for all other Canada Port Authorities were above 80 per cent.

The return on assets for the Canada Port Authorities was 3.3 per cent in 1999. Windsor (25 per cent) had the highest return on assets, followed by Saguenay (20 per cent) and Trois-Rivières (15 per cent).

TABLE 10-13: FINANCIAL RESULTS OF MAJOR PORTS, 1995 – 1999

(Millions of dollars)

	1995	*1996*	*1997*	*1998*	*1999*
Revenues	279.7	285.9	296.8	287.2	240.0
Expenses	231.4	226.3	235.6	227.0	212.1
Operating Income	53.7	59.9	61.2	60.2	27.9
Ratio (per cent)	82.7	79.2	79.4	79.0	88.4
Net Income	**53.5**	**36.2**	**44.5**	**28.1**	**36.0**

Notes: Figures for 1999 include all ports with CPA status as of December 31, 1999.
Figures for 1995 to 1998 include totals for Canada Ports and Harbour Commissions.

Source: Port Financial Statements; Port Corporations and Port Property; Transport Canada

Table 10-13 shows revenues, expenses and incomes for all the Harbour Commissions and Ports Canada ports for the 1995–1998 period, while 1999 data reflects all ports that have Canada Port Authority status as of December 31, 1999.

At first glance, the figures in Table 10-13 indicate that the total revenues decreased in 1999 from $287 million to $240 million. It is important to note, however, that the 1999 revenues do not include the six major ports that were not considered Canada Port Authorities as of December 31, 1999. Table 10-14 compares revenues, expenses, and net income for 1998 and 1999. It includes only those Ports Canada ports and Harbour Commissions that were Canada Port Authorities as of December 31, 1999.

TABLE 10-14: CANADA PORT AUTHORITIES FINANCIAL COMPARISON, 1998 AND 1999

(Millions of dollars)

	Revenues		*Expenses*		*Net Income*	
	1998	*1999*[1]	*1998*	*1999*[1]	*1998*	*1999*[1]
Vancouver[2]	73.4	76.8	51.1	54.8	0.4	17.9
Montreal[2]	57.1	58.9	50.4	57.7	13.0	4.5
Halifax[2]	14.1	15.8	11.0	12.8	3.0	3.4
Quebec City[2]	13.1	11.7	12.3	11.9	(10.6)	2.6
Saint John[2]	11.2	10.4	9.9	9.5	1.9	1.6
St. John's[2]	3.0	3.2	2.7	2.8	0.6	1.0
Prince Rupert[2]	7.2	6.4	6.8	6.0	0.8	1.2
Port Alberni[3]	3.0	3.2	3.2	3.2	0.1	0.3
Fraser River[3]	11.5	15.2	10.2	14.3	2.3	0.8
Nanaimo[3]	5.5	6.1	5.8	6.3	0.2	0.3
North Fraser[3]	4.5	3.5	4.3	3.5	0.3	0.2
Thunder Bay[3]	2.8	3.0	2.3	2.7	1.1	1.1
Toronto[3]	13.6	12.2	15.7	17.4	(0.2)	(3.4)
Windsor[3]	1.6	1.2	0.9	1.0	0.8	0.4
Saguenay[2]	1.2	1.2	0.8	1.0	0.7	0.8
Sept-Îles[2]	7.9	8.0	4.2	4.6	1.8	1.5
Trois-Rivières[2]	3.5	3.2	2.4	2.8	2.2	1.8
Total CPA Ports	**234.2**	**240.0**	**194.0**	**212.1**	**18.4**	**36.0**

Note: Due to rounding columns may not add to totals shown.
1 1999 data includes the financial results of the port's predecessor in that year, and is therefore, a full year.
2 Prior to 1999 - Ports Canada.
3 Prior to 1999 - Harbour Commissions.

Source: Port Financial Statements; Port Corporations and Port Property, Transport Canada

In comparing the same ports from 1998 to 1999, revenues increased from $234 million to $240 million, or approximately 2.5 per cent. Nine of the 17 Canada Port Authorities reported an increase in revenues ranging from $0.1 to $3.7 million. Fraser River and Vancouver reported the highest increases, at $3.7 million (32 per cent) and $3.4 million (five per cent), respectively.

According to Table 10-13, it would also appear that in 1999, expenditures decreased by approximately 6.5 per cent; however, the expenses for 1998 included all Ports Canada and Harbour Commissions expenses. Upon further analysis, expenditures for the same ports

indicate that expenses have increased slightly, from $194 million in 1998 to $212 million in 1999. Montreal expenses increased from $50.4 million to $57.7 million (14.5 per cent), while Fraser River expenses increased from $10.2 million to $14.3 million (40 per cent). Twelve of the 17 Canada Port Authorities recorded increases in expenditures that ranged from $0.1 to $7.3 million, and four reported decreases between $0.4 and $0.8 million. Operating expenditures at Port Alberni remained constant at $3.2 million over the two-year period.

Net income for the major ports that obtained Canada Port Authority status as of December 31, 1999, has increased significantly, from $18.4 million in 1998 to $36 million in 1999, an increase of approximately 96 per cent.

Tonnage for the Canada Port Authority ports in 1999 compared with the tonnage for the same major ports in 1998 indicates a decrease from 207.3 million tonnes to 204.9 million tonnes. Based on this tonnage, the revenue per tonne increased from $1.13 in 1998 to $1.17 in 1999, while expenses per tonne increased from $0.94 to $1.03.

Transport Canada Ports

Ten per cent of the ports remaining under Transport Canada's control generated 73 per cent of the total revenues in 1999/2000. As shown in Table 10-15, revenues have fluctuated year over year, because of numerous factors, including tariff increases implemented in 1995 and 1996, a reduction in the number of Transport Canada ports as a result of divestiture, and various utilization factors of Transport Canada's ports and port facilities.

For fiscal year 1999/2000, gross revenues at the remaining facilities were $19 million, while expenses were $26.2 million. This left an operating revenue shortfall of $7.1 million and an operating ratio of 137 per cent. Capital expenditures for the year were $7.6 million. An additional $16.6 million in grants and contributions was expended during fiscal year 1999/2000 for costs related to transfers associated with port divestitures.

Since the National Marine Policy came into effect, maintenance expenditures have been reduced to a minimum in anticipation of regional/local port divestiture. Because of divestiture delays, however, some unforeseen maintenance expenses and capital expenditures were incurred in order to maintain safety standards. This had the effect of increasing expenses in 1999/2000. In some cases, capital projects were carried out in remote sites for which Transport Canada will continue to maintain full responsibility. A few port transfers of substantial value were concluded during this reporting period accounting for the increase in grants and contributions.

Between 1995 and 1999, revenues per tonne increased from $0.22 to $0.29, or by approximately 32 per cent, while expenses per tonne[4] over the five-year period have remained relatively stable, decreasing from $0.43 per tonne in 1995 to $0.40 per tonne in 1999.

Table 10-15 summarizes the financial details of ports and harbours remaining under Transport Canada's control from 1995/96 to 1999/2000.

TABLE 10-15: FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1995/96 – 1999/00

(Millions of dollars)

	1995/96	*1996/97*	*1997/98*	*1998/99*	*1999/2000*
Revenue[1]	17.1	20.3	20.7	18.6	19.0
Expenses[2]	33.6	28.5	27.4	24.3	26.2
Operating Income	(16.5)	(8.2)	(6.7)	(5.7)	(7.1)
Capital Expenditures	**11.3**	**11.9**	**1.9**	**4.1**	**7.6**
Grants and Contributions[3]	10.0	13.1	1.5	1.3	16.6
Ratio: Expenses/Revenues (per cent)	**196.5**	**140.4**	**132.4**	**130.7**	**137.4**

1 This represents gross revenues.
2 This represents operating and maintenance expenses including commissions.
3 This represents transfers related to the devolution of port facilities.

Source: Annual Reports and Transport Canada. Financial information is based upon accrual.

Port Traffic

The following preliminary data shows the traffic at some Canada Port Authorities in 2000:

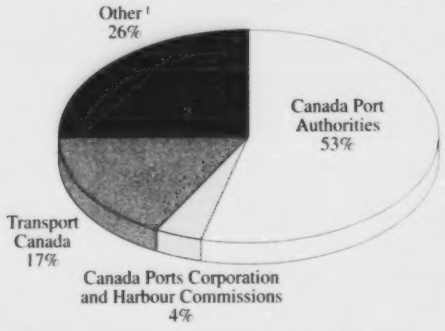
- Halifax: 13.9 million tonnes; 138,000 cruise ship passengers
- Montreal: 20.4 million tonnes; 25,200 cruise ship passengers
- Prince Rupert: 7.6 million tonnes
- Quebec: 16.3 million tonnes
- Saguenay: 0.401 million tonnes
- Saint John: 19.7 million tonnes
- Sept-Îles: 21.1 million tonnes
- Thunder Bay: almost 8.9 million tonnes
- Toronto: two million tonnes
- Vancouver: 69.8 million tonnes; 1.1 million cruise ship passengers
- Windsor: 5.4 million tonnes

Based on preliminary data provided by Statistics Canada (available only up to 1999), Canada's ports handled 386.9 million tonnes of cargo in 1999, an increase of approximately three per cent over 1998.

4 Tonnage statistics include cargos moved across private facilities within Transport Canada public harbours.

Figure 10-5 shows traffic shares by port groups in 1999, based upon port classification as of December 31, 1999.

FIGURE 10-5: TRAFFIC SHARES BY PORT GROUPS, 1999



1 Includes the Department of Fisheries and Oceans, provincial and municipal governments and private facilities.

Source: Transport Canada

Traffic data presented for 1999 is based upon port classification as of December 31, 1999, while 1998 traffic data has been restated to reflect the change of former Canada Port Corporation ports and Harbour Commissions ports to Canada Port Authority status in 1999.

In 1999, Canada Port Authorities handled the largest amount of traffic, with a 53 per cent share of the total. The four ports still classified as divisional ports of the Canada Ports Corporation or as Harbour Commissions as of December 31, 1999, transported four per cent of the total, while another 17 per cent of cargo was moved through Transport Canada facilities. The remaining 26 per cent was handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

Calculating 1998 traffic for Canada Port Authorities and comparing that with 1999 totals shows a decrease from 207.3 million tonnes to approximately 205 million tonnes, a decrease of approximately one per cent. As a result of 34 divestiture transactions completed in 1999, the total tonnage that moved across Transport Canada public ports and public port facilities decreased by 17 per cent. This, coupled with a former Canada Ports Corporation port (Port Colborne, Ontario) being transferred to a new entity, resulted in a significant increase of traffic moving over other ports.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipped totalled 16.3 million tonnes, or 25 per cent of the total traffic handled by Transport Canada ports. Approximately 102 million tonnes of cargo crossed "other" ports. In this category, Port Cartier, Quebec, with approximately 19.9 million tonnes, handled the most cargo, followed by Nanticoke, Ontario, which carried 12.3 million tonnes. The balance was carried by the remaining 110 other ports that reported cargo tonnage to Statistics Canada.

Table 10-16 compares details of tonnage handled in Canada's port system.

TABLE 10-16: TOTAL TONNAGE HANDLED IN CANADA'S PORT SYSTEM, 1998 – 1999

(Thousands of tonnes)

Port System	*1998 Total* [1]	*1999 Total*	*Per cent Change*
Canada Port Authorities [2]	207,295	204,942	(1)
Canada Ports Corporation and Harbour Commissions	16,133	14,645	(9)
Transport Canada [2]	79,024	65,547	(17)
Other	73,611	101,797	38
Total	**376,063**	**386,931**	**3**

1 1998 numbers restated to reflect change of former CPC Ports and Harbour Commissions to CPA status in 1999.
2 Tonnage statistics include cargos shipped across private facilities.

Source: Transport Canada, Shipping in Canada; Statistics Canada, Cat. 54-205-XIB

Small Craft Harbours

During 2000, the Small Craft Harbours (SCH) program of the Department of Fisheries and Oceans (DFO) continued to make progress toward divesting derelict/low-activity fishing harbours and recreational harbours from its inventory. At the end of this exercise, all recreational harbours will have been transferred and the number of fishing harbours under DFO/SCH responsibility reduced to fewer than 750.

Fishing harbours

Since the late 1980s, the SCH has supported the creation of local Harbour Authorities to take over management of commercial fishing harbour facilities in their communities. Harbour Authorities are local non-profit organizations made up of fishers and other harbour users, to which SCH leases the management of the harbour. The Harbour Authorities provide services, maintain the facilities, and manage the harbour operations on a day-to-day basis. As of January 3, 2001, Harbour Authorities managed 604 sites across the country, representing close to 80 per cent of the SCH program's target. Fishing harbours not able to generate the community interest necessary to form and manage a Harbour Authority will be disposed of or, if necessary, demolished. Such harbours are usually low- or no-activity sites and have negligible impact on the commercial fishing industry.

Table 10-17 shows the fishing harbours remaining in the Small Craft Harbours portfolio as of January 3, 2001, by region and type of management.

TABLE 10-17: FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, JANUARY 2001

Region	*Harbour Authorities*	*Small Craft Harbours*	*Total by Region*
British Columbia[1] and Yukon[2]	67	84	151
Prairies and Territories[2]	20	34	54
Ontario	3	10	13
Quebec	51	43	94
Maritimes	277	112	389
Newfoundland and Labrador	186	210	396
Total	**604**	**493**	**1,097**

1 Totals include 48 mooring buoy sites in British Columbia.
2 There are no Harbour Authorities in Saskatchewan, the Northwest Territories, Nunavut or the Yukon.

Source: Small Craft Harbours, Fisheries and Oceans Canada

Recreational harbours

The Small Craft Harbours program is committed to the divestiture of all recreational harbours in its inventory and has achieved 71 per cent of its target since 1994-95, with 599 recreational harbour sites transferred, or in the final stage of divestiture. Recipients are mainly municipalities, local non-profit organizations, First Nations or other federal departments. In Ontario and Quebec, the main recipients of SCH federal recreational harbours are municipalities.

The disposal strategy adopted by SCH complies with the Program Transfer Flexibilities approved by Treasury Board in 1995. Disposals done under this program (i.e. for a $1.00 consideration) have conditions, including a requirement to maintain public access for at least five years. Recreational harbours are offered to potential recipients in a preset order of priority: other federal departments first; provinces, municipalities, local non-profit associations or First Nations second; and the private sector through a tendering process last. Prior to transfer, SCH conducts an environmental assessment of the site and completes any necessary repairs to ensure that the facilities are transferred in a safe and reasonable condition. In the absence of a public body interested in acquiring the facilities, they are offered at market value. Should there be no private interest in the facilities, they are demolished. The recreational harbour divestiture program is expected to continue for several more years.

TABLE 10-18: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96–2000/2001

	1995/96	*1996/97*	*1997/98*	*1998/99*	*Plans for 1999/2000*	*Plans for 2000/2001*	*Remaining to be divested*	*Total by Region*
British Columbia and Yukon	8	1	25	13	7	2	9	65
Central and Arctic	8	50	95	71	41	20	162	447
Quebec	53	24	93	15	18	8	41	252
Maritimes	0	3	10	28	22	8	9	80
Newfoundland and Labrador	0	0	0	1	0	0	1	2
Total	**69**	**78**	**223**	**128**	**88**	**38**	**222**	**846**

Note: Includes harbours transferred or in the final transfer stage as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

Tables 10-18 to 10-20 summarize, by region, the status of the Small Craft Harbours recreational harbour divestiture program, recipients of harbours divested, and type of management of the remaining harbour sites in the SCH inventory.

TABLE 10-19: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, AS OF JANUARY 2001

	Province	*Municipality*	*Private Sector*	*Other*[1]	*Total by Region*[2]
British Columbia and Yukon	54	0	0	0	54
Prairies and Territories	8	5	0	0	13
Ontario	17	171	19	47	254
Quebec	3	177	3	23	206
Maritimes	5	18	3	45	71
Newfoundland and Labrador	0	1	0	0	1
Total	**87**	**372**	**25**	**115**	**599**

1 In the context of the divestiture of recreational harbours, refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.
2 Number of harbours transferred, or in the final transfer stage as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

TABLE 10-20: SMALL CRAFT HARBOURS RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 2001

	Managed under lease[1]	*Small Craft Harbours*	*Other*[2]	*Total by Region*[3]
British Columbia and Yukon	0	3	8	11
Prairies and Territories	9	21	0	30
Ontario	113	33	4	150
Quebec	5	40	1	46
Maritimes	0	9	0	9
Newfoundland and Labrador	0	1	0	1
Total	**127**	**107**	**13**	**247**

1 Managed under lease by municipalities, local non-profit organizations, etc.
2 Refers to a variety of management and non-management situations. Some construction works such as shoreline reinforcement or breakwaters, are largely stable and do not require ongoing management. Some facilities are part of a larger development, such as a marina, and managed as part of that development. In other cases, facilities no longer exist at the site and there is nothing to manage.
3 Remaining recreational harbours in Small Craft Harbours inventory as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

As a result of its Harbour Authority and Disposal Programs, Small Craft Harbours revenues for 2000/01 from leases, licences, and berthage and wharfage are projected to be 33 per cent less than in 1999/2000. The largest decrease is expected in Ontario, for the second consecutive year, with revenue declining by $548,140, or 36 per cent. Close to 94 per cent of the 2000/01 budget is allocated to harbour repairs, while salaries and contributions make up 5.8 and 0.3 per cent of the budget, respectively.

St. Lawrence Seaway

A shared responsibility between Canada and the United States, the St. Lawrence Seaway is a unique inland waterway, extending into the industrial heartland of North America and serving 15 major international ports and some 50 regional ports on both sides of the Canada–US border.

The Seaway locks (15 in total) connect the shipping channel in two major sections: Montreal–Lake Ontario and the Welland Canal. Between Montreal and Lake Erie, the locks lift vessels up to the height of a 60-storey building above sea level. The Montreal–Lake Ontario section has seven locks — five Canadian and two American. The Welland Canal links Lake Ontario and Lake Erie with a series of eight locks. The locks and channels are capable of accommodating vessels 225.5 metres long, 23.8 metres in beam and eight metres in draft. Figure 10-6 shows the St. Lawrence Seaway System.

Second Year Under New Management

In 2000, the Canadian Seaway saw its second full year of management by the St. Lawrence Seaway Management Corporation (SLSMC). The SLSMC began operations of the Canadian portion of the St. Lawrence Seaway on October 1, 1998, following the successful negotiation of a management contract with the federal government pursuant to Part 3 of the *Canada Marine Act*. This agreement is in force until March 31, 2018.

FIGURE 10-6: GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM

Source: St. Lawrence Seaway Authority, Annual Report, 1997 - 1998

Responsible for managing, operating and maintaining the Seaway, the SLSMC must submit a five-year business plan, throughout the term of the agreement, to the Minister of Transport. The plan includes anticipated revenues and operating and asset renewal costs. The corporation is required to charge tolls and generate other revenues to finance the operation and maintenance of the Seaway. For its ports, the federal government is required to provide financial assistance to eliminate operating deficits, if they arise.

North Channel Bridge and the All-Canadian Seaway Option

In 2000, the Minister of Transport announced that an "all-Canadian Seaway" option is no longer required and that the Federal Bridge Corporation Limited is free to begin developing options to replace the high-level bridge at Cornwall. The announcement marked an end to the government's commitment to an all-Canadian Seaway option, which dates back to the 1950s.

During the 1950s, the Seaway project went ahead after receiving support from both Canada and the United States. At the time, however, Canadian interests were concerned about the US commitment to the project; therefore, the federal government decided to retain the option to construct the Seaway as a solely Canadian project at some point in the future. For this reason, the Cornwall Seaway International Bridge was built to Seaway height over the Cornwall Canal, which would have been the routing of an all-Canadian Seaway.

A review of the long-term maintenance strategy for the North Channel portion of the crossing concluded that the cost of major maintenance on the 40-year-old bridge could be as much as double the cost of constructing a new low-level bridge.

TRAFFIC

In the 2000 season, combined traffic on the two sections of the Seaway was down by over one million tonnes from 1999 levels to 46.5 million tonnes (based on preliminary traffic data). This was due largely to lower grain traffic through the system. This decrease in grain was partly offset by an increase in general cargo traffic (primarily iron and steel products) over 1999 levels.

The 1999 navigation season extended for 270 days, with 24-hour navigation of the system beginning on April 1, 1999, and the last ships exiting St. Lambert Lock and the Welland Canal on December 25, 1999.

Traffic decreased slightly from 1998 levels, returning to 1997 levels. While US grain exports increased, activity in the steel industry decreased. Combined Seaway traffic for both major sections totalled 47.86 million tonnes, a decrease of 5.2 per cent from the 1998 total of 50.51 million tonnes. Traffic decreased by about 7.2 per cent to 36.5 million tonnes on the Montreal–Lake Ontario section, and by 7.9 per cent to 37.4 million tonnes on the Welland Canal.

Vessel transits on the Montreal–Lake Ontario section in 1999 were nearly identical to 1998, 3,141 vessel transits compared with 3,158, respectively. On the Welland Canal section, vessel transits increased to 3,626, 199 more than in 1998.

Table 10-21 shows the volume of cargo movements on both major sections of the Seaway from 1990 to 2000.

TABLE 10-21: ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 1990 – 2000

(Thousands of tonnes)

	Montreal–Lake Ontario Section	*Welland Canal Section*
1990	36,656	39,398
1991	34,910	36,919
1992	31,360	33,174
1993	31,970	31,815
1994	38,422	39,703
1995	38,684	39,376
1996	38,075	41,145
1997	36,901	40,902
1998	39,246	40,657
1999	36,400	37,422
2000 (estimated)	35,398	36,577

Note: Movements are combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

Highlights of Traffic by Commodity for 1999

Grain

Once again, Canadian grain traffic was below average levels, while US grain shipments increased. Grain traffic totalled 13.6 million tonnes on the Montreal–Lake Ontario section, a 4.5 per cent increase over 1998, and 13.5 million tonnes on the Welland Canal, a 2.6 per cent increase.

Iron Ore

Iron ore shipments totalled 10.69 million tonnes on the Montreal–Lake Ontario section, a 3.8 per cent decrease from 1998, and 5.82 million tonnes on the Welland Canal section, a 10.6 per cent decrease. These shifts reflect a greater reliance by Canadian steel mills on iron ore originating from Quebec–Labrador.

Coal

Fewer shipments of coal were recorded on the Welland Canal, due to lower demand from Ontario Hydro and the Hamilton steel mills. Traffic amounted to 4.52 million tonnes, a 2.4 per cent decrease from 1998. On the Montreal–Lake Ontario section, coal traffic increased because of additional shipments to industries along the St. Lawrence. Total traffic was 266,000 tonnes, an increase of 35.2 per cent.

Other Bulk Commodities

For other bulk commodities, there was an overall decrease in shipments of major commodities (coke, petroleum, stone, cement, chemicals). On the Montreal–Lake Ontario section, 7.23 million tonnes were carried, a decrease of 8.8 per cent from 1998. On the Welland Canal, 10.06 million tonnes were carried, a decrease of 7.4 per cent.

Table 10-22 shows Seaway traffic by commodity from 1993 to 2000.

TABLE 10-22: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1993 – 2000

(Thousands of tonnes)

Year	*Grain*	*Iron Ore*	*General Cargo*	*Coal*	*Other*	*Total*
1993	10,592	10,906	4,432	4,408	10,647	40,985
1994	12,464	12,625	7,019	4,528	12,255	48,891
1995	14,485	11,872	4,844	5,005	11,917	48,124
1996	12,158	13,362	6,056	5,460	12,903	49,939
1997	13,339	12,051	5,418	5,545	12,600	48,953
1998	12,483	12,117	7,182	5,510	13,839	51,131
1999	14,084	11,320	4,578	4,542	13,335	47,859
2000	13,213	11,315	5,068	4,346	12,573	46,543

Note: Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

Rates and Tariffs

In keeping with the agreement negotiated with Seaway users, a two per cent toll increase for the Canadian section of the Seaway was implemented in 2000. Similar increases were implemented during the 1998 and 1999 seasons. The 1998 increase was the first increase since 1993.

These two per cent annual toll increases, with no discounts or reductions, were negotiated for 1998, 1999 and 2000 as part of the Seaway commercialization agreement. Had the St. Lawrence Seaway Management Corporation been unable to achieve the cost targets set out in its business plan, however, it would have been required to increase the tolls beyond the two per cent level. This was not necessary, however, because the successful 1998 and 1999 seasons allowed SLSMC to meet and even exceed targets. Years four and five of the plan (2001 and 2002) may even see toll discounts or reductions if the corporation continues to exceed the business plan requirements.

Financial Profile

Revenues for 1999/2000 amounted to $76 million, an improvement of over $3.5 million from the estimate in SLSMC's business plan, but on target with its operating budget. Revenues were down from the 1998/99 fiscal year, which generated $83.9 million. However, 1998/99 was also a landmark year, earning the highest toll revenue in Seaway history. In 1999/2000, the revenues derived from ship transits amounted to $73.2 million, a decrease of $6.1 million from the previous year. This decline was largely the result of a 35 per cent reduction in general cargo tonnage for iron and steel. The revenue from other navigation activities and licence fees totalled $1.7 million in 1999/2000. Expenses include the winter works program, such as asset renewal and major maintenance.

The corporation's financial results are not compared with previous years' financial statements from the St. Lawrence Seaway Authority, which exclude the revenues and expenses pertaining to the non-navigational assets, the income taxes relating to the St. Lawrence Seaway Authority, amortization expenses, and other expenses that are treated differently.

Table 10-23 provides the financial results of the St. Lawrence Seaway.

TABLE 10-23: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000

(Thousands of dollars)

Year	*Operating Revenues*	*Operating Expenditures*	*Operating Income*	*Net Income*[1]
1999 (October 1998 to March 1999)[2]				
2000 (April 1999 to March 2000)	76,026	75,156	358	630

1 Following contributions from the Capital Fund Trust.

2 Because SLSMC assumed management of the Seaway on October 1, 1998, its first financial statements reflect only three months of operating revenues (October to December, as the Seaway closes from January to March) and six months of expenses (October 1, 1998, to March 31, 1999). The financial results for the first six months of the corporation's existence are therefore not representative of a full year's operation of the Seaway and are not presented.

Source: St. Lawrence Seaway Management Corporation

Maintenance Activities

As part of the commercialization agreement, the SLSMC is responsible for asset renewal, which budgets

$126 million in infrastructure maintenance and capital expenditures over the five years of the business plan. The actual expenditure for the 1999/2000 fiscal year was $23,357,000. During the first two years of the business plan, the SLSMC spent $49 million on infrastructure, or 39 per cent of the overall allocation.

While the SLSMC manages asset renewal, the Capital Committee which is made up of two members from Transport Canada and two members of the corporation's board, is responsible for approving the asset renewal budget. The committee approves changes to the plan as required, as well as the plan for the next fiscal year.

Marine Pilotage

Legislative Framework

The *Pilotage Act* of 1972, as amended in 1998 by the *Canada Marine Act*, governs marine pilotage in Canada. Under this Act, four regional pilotage authorities were established — Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). Each authority is mandated to provide safe and efficient pilotage services that respond to the particular requirements of its traffic, as well as to the varied geography and climatic conditions of the waterways concerned. Although they are not considered agents of the Crown, all authorities report directly to the Minister of Transport.

Financial and Operating Performance

In 2000, pilotage revenues, on a nationwide basis, did not exceed expenditures. As shown in Table 10-24, only one of the four pilotage authorities, the Atlantic Pilotage Authority, managed to return modest surpluses.

TABLE 10-24: PILOTAGE AUTHORITY FINANCIAL RESULTS, 2000

(Thousands of dollars)

	Revenues	*Expenditures*	*Net Income (Loss)*
Atlantic	11,983	11,240	743
Laurentian	41,347	41,717	(370)
Great Lakes	15,542	16,635	(1,093)
Pacific	41,702	42,120	(418)
Totals	**110,574**	**111,712**	**(1,138)**

Source: Pilotage Authorities' Annual Reports (2000 preliminary)

The results for 2000 represent a shift from the trend toward positive net incomes over the last few years. Financial results for each authority from 1996 to 2000 are shown in Table 10-25.

TABLE 10-25: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1996 – 2000

(Millions of dollars)

Region	*Year*	*Revenues*	*Expenditures*	*Net Income (Loss)*
Atlantic Pilotage Authority (APA)	1996	8,030	7,538	492
	1997	9,638	8,595	1,043
	1998	9,466	8,796	670
	1999	10,934	9,970	964
	2000	11,983	11,240	743
	Per cent change	**9.6**	**12.7**	**(22.9)**
Laurentian Pilotage Authority (LPA)	1996	36,019	38,847	(2,828)
	1997	38,185	39,019	(834)
	1998	41,311	40,847	464
	1999	41,776	41,300	476
	2000	41,347	41,717	(370)
	Per cent change	**(1.0)**	**(1.0)**	**(22.3)**
Great Lakes Pilotage Authority (GLPA)	1996	12,659	11,643	1,016
	1997	13,251	12,041	1,210
	1998	17,249	15,548	1,701
	1999	14,545	14,898	(353)
	2000	15,542	16,635	(1,093)
	Per cent change	**6.9**	**11.7**	**(209.6)**
Pacific Pilotage Authority (PPA)	1996	36,039	35,859	180
	1997	39,802	38,519	1,283
	1998	37,441	37,056	385
	1999	39,106	38,781	325
	2000	41,702	42,120	(418)
	Per cent change	**6.6**	**8.6**	**(228.6)**
Total Pilotage Authorities	1996	92,747	93,887	(1,140)
	1997	100,876	98,174	2,702
	1998	105,467	102,247	3,220
	1999	106,361	104,949	1,412
	2000	110,574	111,712	(1,138)
	Per cent change	**4.0**	**6.4**	**(180.6)**

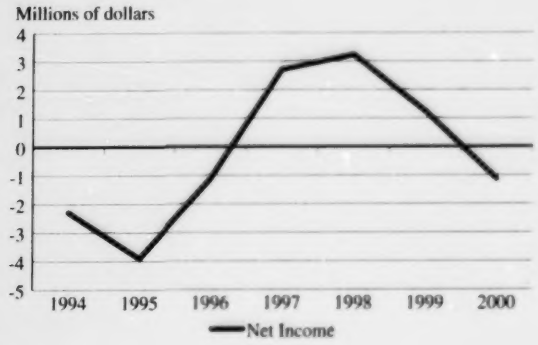
Source: Pilotage Authorities' Annual Reports (2000 preliminary)

Total revenues have risen less than expenses. In 2000, expenses increased by more than inflation. Nevertheless, Figure 10-7 shows clearly the trend toward improved bottom lines for pilotage authorities up until 2000.

To measure efficiency of pilotage services, the average number of assignments per pilot is commonly used. Based on this measure, efficiency increased between 1996 and 1998 but declined in both 1999 and 2000.

Table 10-26 shows the number of assignments for each pilotage authority and the total for all authorities between 1996 and 2000. The variations among the authorities and the fluctuations over the period are in response to traffic levels. Overall, total assignments have grown by 10.3 per cent since 1996.

FIGURE 10-7: PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 2000



Source: Pilotage Authorities' Annual Reports (1999 preliminary)

TABLE 10-26: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1996 – 2000

Pilotage Authority	*Indicators*	*1996*	*1997*	*1998*	*1999*	*2000*
Atlantic (APA)	Total Assignments	8,576	9,760	9,726	11,090	11,498
	Assignments per Pilot	186	212	187	213	229
Laurentian (LPA)	Total Assignments	21,342	20,941	22,018	21,654	20,713
	Assignments per Pilot	123	120	121	120	114
Great Lakes (GLPA)	Total Assignments	6,901	7,192	9,085	8,108	8,605
	Assignments per Pilot	121	113	147	118	106
Pacific (PPA)	Total Assignments	13,403	14,212	13,267	13,776	14,585
	Assignments per Pilot	113	124	115	117	304
Total All Authorities	Total Assignments	50,224	52,105	54,096	54,628	55,402
	Assignments per Pilot	126	129	132	131	129

Source: Pilotage authorities' annual reports

CANADIAN COAST GUARD

RESPONSIBILITIES

The Canadian Coast Guard's mission is fourfold: ensure safe and environmentally responsible use of Canada's waters; support understanding and management of ocean resources; facilitate the use of Canadian waters for shipping, recreation and fishing; and provide marine expertise in support of Canada's domestic and international interests. The Coast Guard also advances the oceans mandate both through its internal partnership with its Department of Fisheries and Oceans' (DFO) sector counterparts and through its primary role of ensuring safe and environmentally responsible use of Canada's waterways.

The Coast Guard's five business lines — marine navigation services; marine communications and traffic services; icebreaking operations; rescue, safety and environmental response; and fleet management — are delivered across DFO's five regions. These business lines cover a range of marine programs, policies and services that deal with a broad cross-section of clients within the marine community, including commercial shipping interests, recreational boaters, the fishing industry, ferry services, tug and barge resupply operations in the North, cruise lines, private-sector shippers, and provincial, municipal and territorial governments as well as federal government departments. The Coast Guard also serves the general public through its role in preserving ecosystems, ensuring that water supplies remain unpolluted by oil and chemical spills, and protecting recreational resources.

The Department of Fisheries and Oceans has two key result commitments:

- the conservation and biological sustainability of fisheries resources, marine and freshwater habitats, and a protected environment; and
- the provision of safe, efficient and accessible waterways and harbours.

The Coast Guard's contributions to these commitments are found in each of its business lines in such areas as response to marine oil emergencies, efficient and effective aids to navigation infrastructure, annual deliveries by ship to northern settlements and military sites, and client and public awareness of programs and policies.

Marine Navigation Services

The overall objective of the Coast Guard's Marine Navigation Services (MNS) business line is to provide safe, efficient and accessible waterways. In keeping with this commitment, the Marine Navigation Services provides, operates and maintains a system of navigational aids; ensures waterways are safely designed and maintained; provides navigation safety information to mariners; ensures protection of the public right to navigation; and protects the environment.

The Marine Navigation Services navigational infrastructure consists of 262 automated light stations, 52 of which are staffed; five LORAN C communication stations; 20 Differential Global Positioning System (DGPS) transmitter sites; and over 6,000 land-based fixed marine aids and more than 12,000 floating aids.

During 2000, the Marine Navigation Services continued to move forward on a number of activities in support of its mission. It continued to modernize navigational aids, for example, through several initiatives, including the complete implementation of a full DGPS in the spring of

2000. It also continued to modernize, maintain, implement and upgrade information systems such as the national databases on the use of Canadian waterways, the Aids Program Information System (APIS), the Marine Aids Costing Model (SRAN), and the Navigable Waters Database System. The Marine Navigation Services also continued to pursue amendments to the *Navigable Waters Protection Act*.

Marine Communication and Traffic Services

All the functions of the Marine Communication and Traffic Services (MCTS) are derived from a regulatory framework based primarily on the *Canada Shipping Act* and the Safety of Life at Sea Convention. Marine Communication and Traffic Services provide distress and safety communications and co-ordination; vessel screening to prevent entry of unsafe vessels into Canadian waters; regulation of vessel traffic movements; and management of an integrated system of marine information and public correspondence services. Along with ensuring safe marine navigation, the Marine Communication and Traffic Services also support economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship/shore communications.

The Marine Communications and Traffic Services group is supported by an infrastructure that includes staffed communications centres and remote transmitter and receiver sites.

This business line is a core element of the national movement toward sustainable development for oceans and marine resources. As such, it fully supports the Oceans Strategy by looking for ways to improve the monitoring and management of marine protected areas.

The Marine Communication and Traffic Services group is also working to improve its surveillance capability by developing implementation strategies for universal Automatic Identification Systems (AIS) — a leading-edge marine navigation technology that provides mariners and competent authorities with a more efficient and cost-effective means of service delivery. To improve its communications capability, the MCTS is continuing to implement the Global Maritime Distress Safety System (GMDSS), and review infrastructure to find further efficiencies through the application of technological changes.

Icebreaking Operations

Activities under the Icebreaking Operations business line include providing icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. It also co-ordinates the movement of cargo for the annual resupply of northern settlements and military sites using contracted commercial carriers.

Traditionally, the icebreaking program has provided a wide range of free services; over the past several years, however, it has moved to a more client-focused, demand-driven service that reflects recent downsizing activities. Commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee.

During 2000, Icebreaking Operations continued to work with the US Coast Guard, the North Atlantic Ice Patrol and other governments involved with icebreaking activities to maintain international expertise and recognition. It also continued to strengthen its collaboration with Transport Canada's Marine Safety Branch for the Harmonization of Polar Ship Rules to protect Canada's position and take a proactive role in forums dealing with icebreaking operations or ships operating in ice-covered waters. Preliminary results of an economic study on the benefits of icebreaking services indicate that benefits far surpass the costs of providing this service.

Rescue, Safety and Environmental Response

The Rescue, Safety and Environmental Response (RSER) business line encompasses the following major activities: marine search and rescue (SAR); environmental response and departmental national emergency preparedness; and the promotion of boating safety to the marine public through prevention and regulation. Its main objective is to save lives and protect the marine environment.

RSER supporting infrastructure includes SAR stations with in-shore rescue boats and several spill-response equipment depots.

This business line moved forward on a number of fronts in 2000, including implementing major new regulating measures to improve boating safety. In particular, these measures covered mandatory operator competency; age and horsepower restrictions; and modernization of small vessel regulations. The group also worked to improve the effectiveness of the oil spill preparedness and response regime by reviewing regulations, standards and guidelines.

The Rescue, Safety and Environmental Response division continued to develop a Canadian hazardous and noxious substances response regime by maintaining the consultation process with major stakeholders and providing an effective maritime search and rescue service through quality and enhanced evaluation initiatives.

Fleet Management

The Fleet Management business line supports all Department of Fisheries and Oceans performance commitments. Its goal is to provide a safe, efficient and cost-effective sea and air fleet and the related services necessary to support DFO's program delivery, as well as improve client satisfaction.

To support this commitment, the Fleet Management group acquires, maintains and schedules DFO's vessel and air fleets in support of the following program areas: Marine Navigation Services; Icebreaking Operations; Rescue, Safety and Environmental Response; Fisheries Management; and Fisheries and Oceans Science and Hydrography. These program areas provide the funding to crew and operate the fleet. Fleet Management also arranges for any required increase in fleet capabilities by arranging for other government departments and the private sector to provide additional sea and air support to the programs.

Fleet Management activities in 2000 included a move toward a base-fleet concept in which an established minimum number of vessels deliver the program requirements and provide a stable base for financial, operational and human resource planning. In addition, the group continued to implement the fleet safety management system to the standards of the International Management Code for the Safe Operation of Ships (ISM Code) and a costing model to give managers and clients a true understanding of the cost of fleet operations.

Table 10-27 lists the vessel, aircraft and facility assets held by the Canadian Coast Guard in 2000.

TABLE 10-27: CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 2000

Vessels and Aircraft	*Canadian Coast Guard Facilities*
125 major ships	11 major bases
500+ small craft[1]	8 sub-bases
23 inshore rescue boats	22 Marine Communication and Traffic Service centres
4 air cushion vehicles	48 Search and Rescue bases
27 rotary-wing aircraft	
3 fixed-wing aircraft[2]	

1 Includes lifeboats, surf boats, self-propelled barges, small craft carried on larger ships, shore-based work boats, floating spill boats, oil slick-lickers, and other small craft at Canadian Coast Guard bases and light stations.
2 Two owned by Transport Canada and one chartered.

Source: Department of Fisheries and Oceans

Financial Situation — Canadian Coast Guard

Through a combination of efficiency measures and reduced operations, the Coast Guard has permanently reduced its net expenditures on all these services. These reductions have lowered expenses by $140 million, or 30 per cent, over the four-year period ending 1998/99.

Table 10-28 shows the Coast Guard's financial results for its five major business lines for the last four fiscal years. Results for 2000/01 reflect forecasted expenditures to fiscal year-end and will not be finalized until the end of the fiscal year.

TABLE 10-28: CANADIAN COAST GUARD REVENUES AND EXPENDITURES[1], 1997/98 – 2000/01

(Millions of dollars)

Item	*1997/98*	*1998/99*	*1999/2000*	*2000/2001*[2]
Revenue (1)	37.3	39.9	43.7	46.9
Gross Expenditures (2)	522.8	471.0	480.2	427.9
Net Expenditures (2)-(1)	485.5	431.1	436.5	381.0

1 Includes Marine Navigation Services (MNS); Marine Communication and Traffic Services (MCTS); Icebreaking Services; Rescue, Safety and Environmental Response (RSER); and Fleet Management.
2 2000/2001 reflects forecasted expenditures to year-end and will not be finalized until the end of the fiscal year.

Source: Department of Fisheries and Oceans

To obtain a fair contribution from users for programs from which they directly benefit, the Coast Guard has implemented user fees for some programs. The Marine Navigation Services Fee, for example, was introduced in June 1996. It generates $28.1 million annually, including administration costs.

The Maintenance Dredging Services Tonnage Fee for the St. Lawrence Ship Channel, which came into effect in September 1997, is only an interim measure to cover the total costs incurred by the Coast Guard to provide these maintenance dredging services. The Coast Guard is continuing to work with representatives of the commercial marine transportation industry to arrive at a long-term arrangement, including discussions regarding the transfer of responsibilities to industry for these dredging services.

On December 4, 1998, the Minister of Fisheries and Oceans proposed changes to the Icebreaking Services Fee that would generate $6.9 million annually, including administrative costs. The proposal is built around a transit-based ice-breaking fee that would be uniformly applied to each transit to, from or within the ice zone during the ice season.

Table 10-29 shows a breakdown of the Coast Guard's revenues and expenditures by its five main business lines for fiscal year 2000/01.

TABLE 10-29: CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2000/01

(Millions of dollars)

	Business Line					
	MNS	*MCTS*	*ICE*	*RSER*	*Fleet Mgmt.*	*CCG Total*
Revenues (1)	32.2	0.2	14.4	0.1	0.0	46.9
Gross Expenditures (2)	92.4	76.4	38.9	129.7	90.5	427.9
Net Expenditures [(2)-(1)]	60.2	76.2	24.5	129.6	90.5	381.0

Notes: MNS: Marine Navigation Services; MCTS: Marine Communication and Traffic Services; ICE: Icebreaking Services; RSER: Rescue, Safety and Environmental Response; CCG: Canadian Coast Guard.

Source: Department of Fisheries and Oceans

AIR TRANSPORTATION INFRASTRUCTURE

AIR NAVIGATION SYSTEM

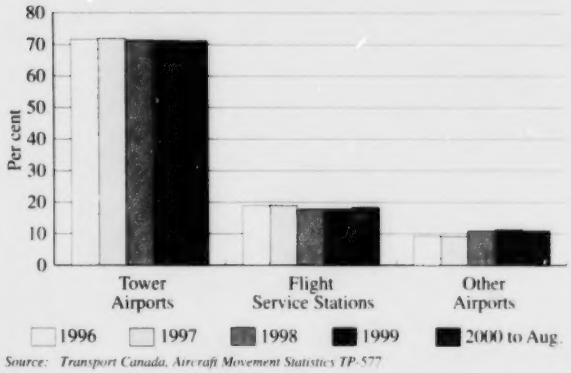
NAV Canada, a private, non-share capital corporation, became the owner and operator of Canada's Air Navigation System (ANS), when the system was transferred from the federal government on November 1, 1996. The system comprises seven Area Control Centres (ACC), one terminal control unit, 43 control towers, 77 Flight Service Stations and 67 maintenance centres, as well as more than 1,400 ground-based navigational aids. NAV Canada provides air traffic control services, flight information, weather briefings, airport advisories and electronic aids to navigation.

AIR NAVIGATION OPERATIONS

In 2000, the Air Navigation System supported approximately 3.75 million Instrument Flight Rules (IFR) flight plans, 340,000 overflights of Canadian airspace and 320,000 oceanic flight movements. Over five million flight movements were handled by NAV Canada's Control Towers and over 1.2 million movements by Flight Service Stations. Figure 10-8 illustrates the distribution of aircraft arrivals and departures by airport category.

At the end of 2000, NAV CANADA employed 1,828 air traffic controllers (not including trainees) and 781 operational Flight Service Specialists and was continuing to invest heavily in the training of additional controllers and specialists. The number of control towers in Canada has remained constant since the conversion of North Bay's tower to a Flight Service Station in March 1999. The number of Area Control Centres has been constant since 1996. Table 10-30 lists the number of control towers, area control centres, terminal control units and flight service stations in Canada from 1996 to 2000.

FIGURE 10-8: AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1996 – 2000



Source: Transport Canada, Aircraft Movement Statistics TP 577

TABLE 10-30: SUMMARY OF KEY CANADIAN AIR TRAFFIC CONTROL OPERATION STATISTICS, 1996 – 2000

	1996	*1997*	*1998*	*1999*	*2000*
Air Traffic Controllers[1]	1,704	1,744	1,716	1,781	1,828
Towers	44	44	44	43	43
Area Control Centres	7	7	7	7	7
Terminal Control Units	2	1	1	1	1
Flight Service Specialists[2]	782	821	816	789	781
Flight Service Stations	83	82	81	78	77
CARS	55	55	56	59	62

1 Operational Controllers (not including trainees)
2 Operational Flight Service Specialists
3 12 CARS are operated by the Quebec Government.

Source: NAV Canada

SYSTEM IMPROVEMENTS

NAV Canada completed a number of projects to improve operations in 2000. The *Polar Routes Feasibility Study* was one particular initiative that was undertaken to enhance service to customers. In conjunction with the Federal Aviation Authority of Russia (FAAR), NAV Canada demonstrated that significant savings in time and money could be obtained by flying routes directly over the North Pole region. To accommodate these routes, NAV Canada intends to invest $7 million to modify the Air Navigation System in Canada's north, primarily the communications infrastructure. Assistance will also be provided to the Federal Aviation Authority of Russia to secure investment to update its air navigation system, and provide language training for Russian controllers.

NAV Canada undertook a number of other notable projects in 2000, some of which are yet to be completed, including:

- Completion of the IFR study, which will result in changes to national sectorization and airspace assignment between Area Control Centres.

- Expansion of the Reduced Vertical Separation Minima sectors within domestic airspace. When completed, this initiative will increase the air navigation system's capacity and provide a greater choice of routes.
- Implementation of a Converging Runway Display System at the Calgary airport following an extensive in-house modification of a system purchased from the Mitre Corporation. With this system, runway capacity can be increased by up to 30 per cent under adverse weather conditions.
- Introduction of a new Pre-Departure Clearance (PDC) system at Toronto's international airport resulting in faster taxi and take-off routines by reducing voice communication requirements and frequency congestion.
- Deployment of an Integrated Information Display System/Extended Computer Display System (IIDS/EXCDS) in Toronto, Winnipeg, Vancouver, Calgary, Edmonton, Ottawa and Saskatoon towers to allow controllers to manage electronic flight data online, replacing the traditional method of using paper strips.
- Further deployment of the Radar Data Processing Situation Display (RsiT) to Area Control Centres across Canada providing enhanced functionality for IFR controllers.
- The successful factory and site acceptance testing of the Canadian Automated Air Traffic System (CAATS), the world's first automated flight data processor, providing integration of radar and flight data on a single controller console.

Improvements to the navigation system in 2000 were not limited to air traffic control. NAV Canada also continued to make progress in its program to consolidate flight planning, en-route flight information and advisory services in nine Flight Information Centres (FIC), which will be located in Halifax, Quebec City, London, Winnipeg, Edmonton and Kamloops, Whitehorse, Yellowknife and North Bay.

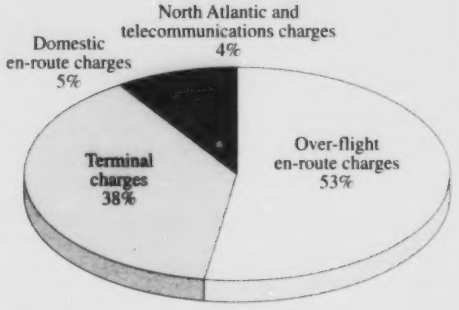
Financial Performance

The Air Transportation Tax and transition-period payments by the government to the NAV Canada were abolished in November 1, 1998. At this point, NAV Canada became fully responsible for recovering its costs from customers in the form of service charges. The corporation's service charge structure is in accordance with the *Civil Air Navigation Services Commercialization Act.*

NAV Canada collects its revenues in the form of charges levied on aircraft operators for the provision or availability of air navigation services. The charging system consists of terminal and en-route charges, overflight charges and oceanic charges. Aircraft weighing three metric tonnes or less pay a flat annual fee, while aircraft weighing greater than three metric tonnes are charged on a per movement or daily basis.

A reduction in user fees, first introduced in 1999, continued in 2000, saving customers approximately $50 million annually. NAV Canada intends to maintain these reduced charges until December 31, 2001. Figure 10-9 shows the fee sources for NAV Canada in percentage terms for 2000.

FIGURE 10-9: NAV CANADA FEE SHARES, 2000


North Atlantic and telecommunications charges 4%
Domestic en-route charges 5%
Terminal charges 38%
Over-flight en-route charges 53%

Source: NAV Canada

For the fiscal year ending August 31, 2000, NAV Canada reported $909 million in revenues, $703 million in operating expenses, and $204 million in interest, depreciation and restructuring expenses. This resulted in an excess of revenues over expenses of $2 million. This compares with 1999 fiscal results of $933 million in total revenues, $711 million in operating expenses, and $215 million in interest, depreciation and restructuring expenses for a $7 million excess of revenues over expenses. Table 10-31 compares NAV Canada financial results for 1999 and 2000.

TABLE 10-31: FINANCIAL SUMMARY FOR NAV CANADA, 1999 – 2000

(Thousands of dollars)

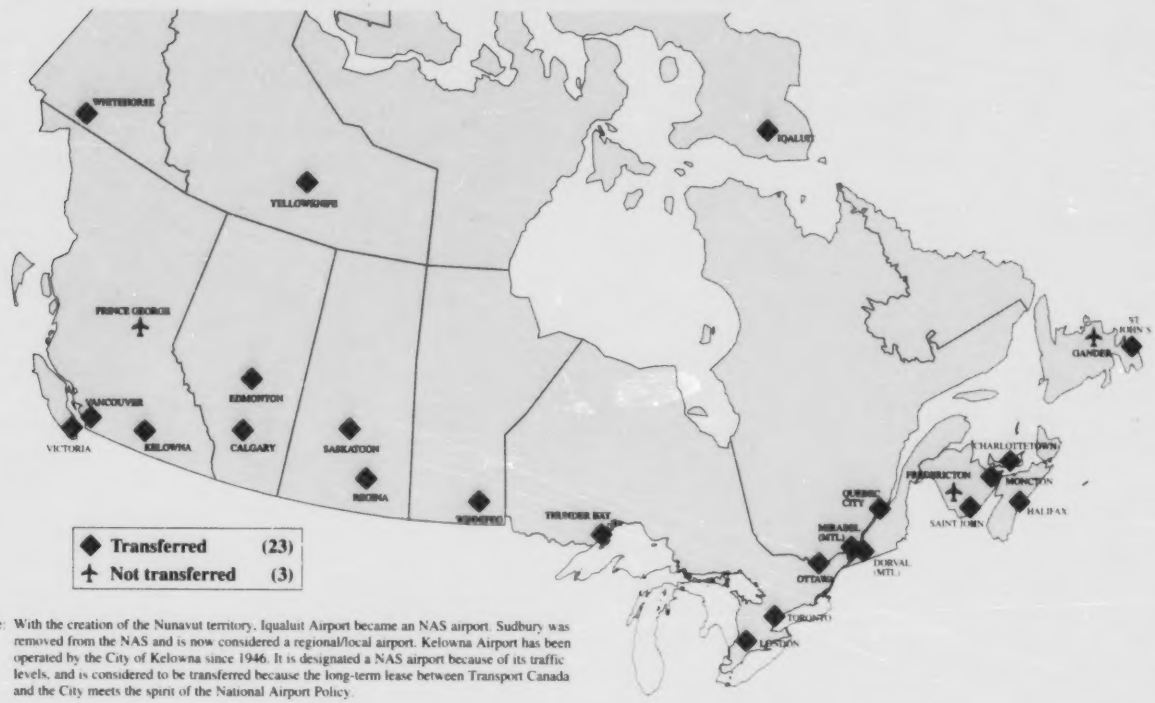
Item	*1999*	*2000*
Total Revenue	933,120	909,074
Operating Expenses	710,640	703,465
Other Expenses	215,537	203,859
Excess of Revenue over Expenses	6,943	1,750
Capital Expenditures	**122,555**	**101,623**

Source: NAV Canada Annual Report, 2000

Airports

Canada's approximately 1,800 aerodromes are divided into three categories: water bases for float and ski planes, heliports for helicopters, and land airports for fixed-wing

FIGURE 10-10: MAP OF AIRPORTS DIVESTITURE, 2000 — NATIONAL AIRPORTS SYSTEM



Note: With the creation of the Nunavut territory, Iqaluit Airport became an NAS airport. Sudbury was removed from the NAS and is now considered a regional/local airport. Kelowna Airport has been operated by the City of Kelowna since 1946. It is designated a NAS airport because of its traffic levels, and is considered to be transferred because the long-term lease between Transport Canada and the City meets the spirit of the National Airport Policy.

Source: Transport Canada

aircraft. Aerodromes refer to facilities registered with Transport Canada as aircraft landing and take-off sites.

Most of Canada's commercial aviation activity takes place at certified land airports, sites that because of their level of activity or location are required to meet Transport Canada's airport certification standards.

At the close of the year 2000, the Canada Flight Supplement listed 1,109 sites in the land airport category. Of these, 352 were certified. Table 10-32 shows that 247 land airports offered scheduled passenger service, while the remaining 862 were available for other public and private uses. Thirty airports handle over 94 per cent of all commercial air passenger traffic in Canada.

TABLE 10-32: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2000

Airport type	*Number*	*Airport service*	*Number*
Certified Land Airports	352[1]	Airports with Scheduled Passenger Service	247[2]
Registered Land Aerodromes	743		
Military (land) Aerodromes	14	Airports/Aerodromes without Scheduled Passenger Service	862
Total	**1,109**	**Total**	**1,109**

1 *Canada Flight Supplement*, November 30, 2000.
2 Official Airline Guide, December 15, 2000.

Source: Transport Canada

While many aerodromes are privately owned, the majority of certified airports are publicly owned. Since the introduction of the National Airports Policy (NAP) in 1994, the federal government has been reducing its role in the management, operation and ownership of airports.[5]

The National Airports Policy established a system of core airports known as the National Airports System (NAS). This system, which includes 26 airports that handle at least 200,000 passengers per year or serve provincial/territorial capitals, is considered essential to Canada's domestic prosperity and international competitiveness.

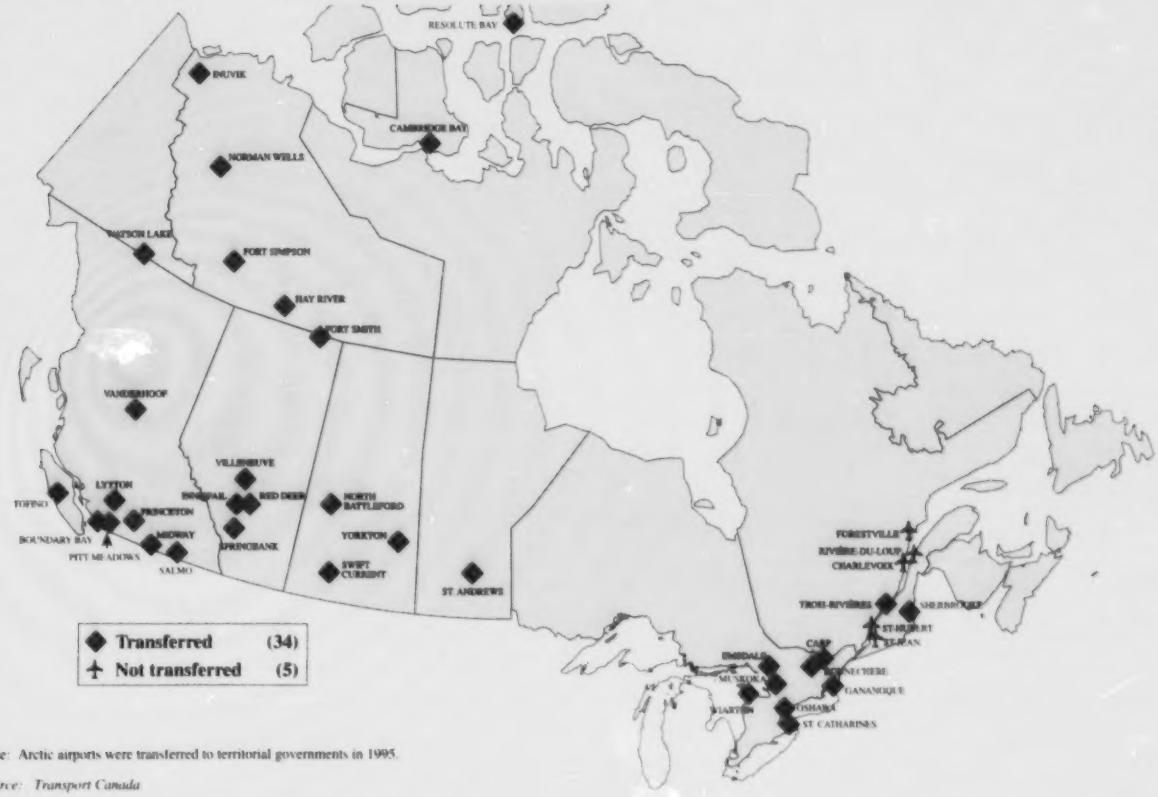
While the federal government retains ownership of the NAS airports under the National Airports Policy (except for the Whitehorse, Yellowknife and Iqaluit airports, which have been transferred to their respective territorial governments), it has been transferring them to not-for-profit airport authorities by means of long-term

5 More detailed information on the National Airports Policy and the status of airport divestitures is available on Transport Canada's Web site at http://www.tc.gc.ca/en/airports.htm.

FIGURE 10-11: MAP OF AIRPORTS DIVESTITURE, 2000 — REGIONAL/LOCAL AIRPORTS

Source: Transport Canada

FIGURE 10-12: MAP OF AIRPORTS DIVESTITURE, 2000 — SMALL AND ARCTIC AIRPORTS



Note: Arctic airports were transferred to territorial governments in 1995.

Source: Transport Canada

leases.[6] In 1994, the federal government started transferring 149 Transport Canada owned, operated or subsidized airports to local operators.

In 2000, new airport authorities took over the operation of the Halifax International and Jean Lesage International (Quebec City) airports. By the end of the year, Transport Canada was directly involved in the operation and management of three National Airport System (NAS) airports. The location and divestiture status of all the NAS airports is shown in Figure 10-10.

The 1994 National Airports Policy established, in addition to the NAS, four other categories of Transport Canada owned, operated or subsidized airports: regional/local (71 airports), small (31 airports), arctic (8 airports) and remote (13 airports). Figures 10-11 and 10-12 show the divestiture status of the regional/local, small and arctic airports at year end 2000.[7]

As the divestiture program nears completion, and new airport operators gain experience, more emphasis is being placed on the Department's landlord role with respect to the NAS airports leased to Airport Authorities. An enhanced lease monitoring program and specialized training for lease managers is being implemented.

In approving the first transfers to airport authorities in 1992, the federal government required that a major review be carried out after five years of operation. As such, in 1997, Transport Canada began its review of the first four locally based airport authorities to operate NAS airports. The *LAA Lease Review Consultation Report* was released to stakeholders in 1999. The review continued through 2000 and was broadened to include issues common to many of the NAS airports. The overall conclusions remain the same as reported in 1999: the government's decision to commercialize its key airports was a sound one; the 1994 National Airports Policy was a positive step; and some refinements should be considered to ensure the continued effectiveness of the policy. In particular, the review noted deficiencies in transparency relating to pricing practices and financial reporting at some airport authorities. The federal government is developing plans to address these findings.

Many of the NAS airports continued construction projects to improve or expand facilities throughout 2000. Airport improvement fees (AIFs) are being widely used as a means of funding these capital projects. By the end of 2000, all of the airport authorities operating NAS airports were either collecting airport improvement fees or had announced intentions to do so. Table 10-33 lists the airports that charge airport improvement fees, as well as when they started and the amount collected in 1999.

FINANCIAL PERFORMANCE

Airport Authorities' Revenues and Expenses

As noted above, airport authorities operate the majority of NAS airports under leases with the federal government. They are incorporated as not-for-profit organizations with no equity shareholders. They fund their operations and improvements with revenues derived from airport users.

In 2000, 16 airport authorities issued annual reports for the full calendar year 1999. Table 10-34 presents the total results and average ratios for the 16 airport authorities.

TABLE 10-33: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS

Airport	*Charge per Passenger*	*Date*	*Amount Collected ($000) 1999*	*Collected directly*[1]	*Collected through tickets*[2]
Vancouver[3]	$5-$15	May 1993	55,581	X	
Calgary[4]	$10	Oct. 1997	30,026		X
Edmonton[5]	$5-$10	April 1997	13,982		X
Montreal[6]	$10	Nov. 1997	31,600	X	
Kelowna[7]	$5	Feb.1998	1,725		X
Winnipeg[8]	$10	July 1998	6,616		X
Thunder Bay	$10	Mar. 1998	1,662	X	
Moncton	$10	Oct. 1998	1,354	X	
Ottawa	$10	Sept. 1999	3,860		X
Regina	$10	Oct. 1999	632		X
St. John's	$10	Oct. 1999	630		X
Saint John	$10	Sept. 1999	297	X	
Saskatoon	$5	Sept. 1999	448		X
Victoria	$5	Oct. 1999	479		X
London[9]	$3	April 1999	360	X	X
Charlottetown	$10	Jan. 2001	-	X	
Halifax	$10	Jan. 2001	-		X
Quebec City	$5	Apr. 2001	-		X
Toronto[10]	$10, $7	June 2001	-		X

1 Fees collected directly from passengers before embarking.
2 Fees included automatically in the price of each departing ticket due to an airport improvement fee agreement.
3 Vancouver: $5 for destinations within British Columbia and Yukon; $10 for other North American destinations, Mexico and Hawaii; and $15 other international destinations.
4 Calgary: The airport improvement fee from October 1997 to December 1998 was $5 per passenger and changed to $10 beginning January 1999.
5 Edmonton: Began at $5 for destinations within Alberta and $10 outside Alberta. As of January 2000, the airport improvement fee is $10 for all destinations.
6 Montreal: Aéroports de Montréal.
7 Kelowna: Unlike Airport Authorities, the City of Kelowna is not obliged to report these amounts to Transport Canada.
8 Winnipeg: The airport improvement fee from July 1998 to September 1999 was $5 per passenger but changed to $10 beginning October 1999.
9 London: Starting April 1, 2001 the airport improvement fee will change to $7 per passenger. Depending on the airline, the fee can be collected directly or through the ticket.
10 Toronto: $10 for departing passengers and $7 for connecting passengers.

Source: Airport authority annual reports and Web sites.

6 Five airports were transferred in 1992 (prior to the National Airport Policy) to four airport authorities: Vancouver, Calgary, Edmonton and Montreal (Dorval and Mirabel airports).

7 Thirteen remote airports currently receive federal assistance and are not subject to transfer at this time. They are Sandspit, B.C.; Fort Chipewyan, Alta.; Churchill, Man.; Norway House, Man.; Moosonee, Ont.; Iles-de-la-Madeleine, Que.; Lourdes-de-Blanc-Sablon, Que.; Kuujjuaq, Que.; Waskaganish, Que.; Chevery, Que.; Wemindji, Que.; Schefferville, Que.; Eastmain River, Que.

TABLE 10-34: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1999

(Thousands of dollars)

Financial Information	*Toronto*	*Vancouver*	*Montreal*	*Calgary*	*Edmonton*	*Ottawa*	*Winnipeg*	*Victoria*
Aeronautical Revenues	259,287	71,443	59,200	35,769	17,792	18,848	13,756	3,102
Non-Aeronautical Revenues	157,871	174,223	104,705	60,219	34,995	19,636	17,714	4,955
Subtotal Revenues	**417,158**	**245,666**	**163,905**	**95,988**	**52,787**	**38,484**	**31,470**	**8,057**
Expenses (less Interest Charges)	316,662	174,864	157,215	61,826	39,105	30,330	23,798	6,392
Income	**100,496**	**70,802**	**6,690**	**34,162**	**13,682**	**8,154**	**7,672**	**1,665**
Interest Charges	61,536	21,326	30	0	765	230	0	0
Net Income	**38,960**	**49,476**	**6,660**	**34,162**	**12,917**	**7,924**	**7,672**	**1,665**
Acquisition of Capital Assets	367,271	92,766	60,383	67,092	55,189	6,969	9,175	696
Enplaned/Deplaned Passengers (000)	26,690	15,137	9,406	8,102	3,829	3,210	2,748	1,183
Ratios								
Per cent of Operating	75.91	71.18	95.92	64.41	74.08	78.81	75.62	79.33
Per cent of Aeronautical Revenues Vs Total	62.16	29.08	36.12	37.26	33.71	48.98	43.71	38.50
Per cent of Non-Aeronautical Revenues Vs Total	37.84	70.92	63.88	62.74	66.29	51.02	56.29	61.50
Total Revenues per passenger	**15.63**	**16.23**	**17.43**	**11.85**	**13.79**	**11.99**	**11.45**	**6.81**
Total Expenses per passenger	**11.86**	**11.55**	**16.71**	**7.63**	**10.21**	**9.45**	**8.66**	**5.40**

Financial Information	*Saskatoon*	*Regina*	*St. John's*	*Thunder Bay*	*London*	*Moncton*	*Saint John*	*Charlottetown*	**Total**
Aeronautical Revenues	3,515	1,781	4,496	3,334	2,557	2,199	912	1,206	499,197
Non-Aeronautical Revenues	4,225	2,596	4,620	3,373	3,481	1,897	1,795	2,094	598,399
Subtotal Revenues	**7,740**	**4,377**	**9,116**	**6,707**	**6,038**	**4,096**	**2,707**	**3,300**	**1,097,596**
Expenses (less Interest Charges)	4,722	3,686	6,298	3,833	4,113	4,325	1,904	2,513	841,586
Income	**3,018**	**691**	**2,818**	**2,874**	**1,925**	**(229)**	**803**	**787**	**256,010**
Interest Charges	0	22	49	12	0	74	0	4	84,048
Net Income	**3,018**	**669**	**2,769**	**2,862**	**1,925**	**(303)**	**803**	**783**	**171,962**
Acquisition of Capital Assets	3,417	859	5,039	489	568	10,660	69	365	681,007
Enplaned/Deplaned Passengers (000)	828	754	727	491	386	283	188	155	74,117
Ratios									
Per cent of Operating	61.01	84.21	69.09	57.15	68.12	105.59	70.34	76.15	76.68
Per cent of Aeronautical Revenues Vs Total	45.41	40.69	49.32	49.71	42.35	53.69	33.69	36.55	45.48
Per cent of Non-Aeronautical Revenues Vs Total	54.59	59.31	50.68	50.29	57.65	46.31	66.31	63.45	54.52
Total Revenues per passenger	**9.35**	**5.81**	**12.54**	**13.66**	**15.64**	**14.47**	**14.40**	**21.29**	**14.81**
Total Expenses per passenger	**5.70**	**4.89**	**8.66**	**7.81**	**10.66**	**15.28**	**10.13**	**16.21**	**11.35**

Note: **Aeronautical and Non-Aeronautical Revenues:** Aeronautical revenues are generated principally from airlines and other commercial aviation sources, and consist mainly of landing fees and terminal fees. Revenues from concessionaire sales (stores, restaurants, etc.), car parking, space rental and airport improvement fees are considered non-aeronautical.
St. John's annual report covers a 13-month period. The figures provided are pro-rated to approximate a 12-month period. Regina, Saint John and Charlottetown transferred during the year 1999. Their 1999 annual reports reflect airport revenues and expenditures from the dates of transfer. The results of Regina and Saint John also include pre-transfer expenditures of airport authorities.

Source: Airport Authority 1999 annual reports

With 74.1 million enplaned/deplaned passengers, these airport authorities generated on average $14.81 per passenger in revenues and incurred expenses of $11.35 per passenger in 1999. They spent a total of $681 million in the acquisition of capital assets.

Transport Canada's Revenues and Expenses

As Transport Canada transfers airports to airport authorities, its expenditures and revenues from the operation of airports are declining. In 1999/2000, Transport Canada spent $155.6 million on the operation of airports, while taking in revenues of $55.3 million. It also received an additional $214.5 million in rent from eight NAS airport authorities in return for transferring the airport business to airport authorities in the National Airport System on the basis of the rent clauses in the leases with the federal government.

Airport Capital Assistance Program

Since April 1995, Transport Canada has administered the Airport Capital Assistance Program (ACAP) to help eligible non-National Airport System airports finance capital projects related to safety, asset protection and operating-cost reduction. To be eligible for this funding, the airports must receive a minimum of 1,000 regularly scheduled passengers annually, meet airport certification requirements, and not be owned by the federal government.

In 2000, the program approved 56 projects at 39 airports for funding at an estimated total of $47.8 million. Appendix 10-1 lists the projects that received funding approval under the program in 2000 by site and province.

In June 2000, the Airport Capital Assistance Program was renewed and its funding increased to $190 million over the next five years. Program eligibility was expanded to accommodate the proposed Aircraft Emergency Intervention Services (AEIS) regulations. As a result, airports that will be required by regulations to provide AEIS — and providers of these services — will be eligible to apply for program funding to help cover specified costs associated with implementation.

Table 10-35 summarizes ACAP expenditures by province from 1995/96 to 1999/2000.

TABLE 10-35: AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 1999/2000

(Thousands of dollars)

Province	*1995/96*	*1996/97*	*1997/98*	*1998/99*	*1999/2000*	*Total*
Newfoundland	-	-	-	-	315	315
Prince Edward Island	-	-	-	-	-	-
Nova Scotia	-	-	-	402	2,702	3,104
New Brunswick	509	885	1,087	4,553	296	7,330
Quebec	-	-	3,203	5,911	1,627	10,741
Ontario	909	3,233	13,465	7,617	2,932	28,156
Manitoba	151	172	970	2,187	3,850	7,330
Saskatchewan	-	2,877	452	1,575	5,103	10,007
Alberta	90	815	1,129	3,017	999	6,050
British Columbia	33	1,417	880	3,307	2,096	7,733
Northwest Territories	-	-	-	-	230	230
Yukon	-	-	-	-	-	
Nunavut	-	-	-	-	-	
Total	**1,692**	**9,399**	**21,186**	**28,569**	**20,150**	**80,996**

Source: Transport Canada

APPENDIX 10-1

AIRPORTS CAPITAL ASSISTANCE PROGRAM — PROJECTS APPROVED IN 2000

				Project funding in thousands of dollars	
Province	*Site*	*Description*	*Funded*	*Site Total*	*Province Total*
Newfoundland	Stephenville	Various Airport Improvements	22.06.00	1,131.7	1,131.7
Prince Edward Island					0.0
Nova Scotia	Yarmouth	Heavy Duty Loader with Attachments	09.08.00	331.0	331.0
New Brunswick					0.0
Quebec	Chisasibi	Heavy equipment purchase	10.01.00	710.0	
	Gaspé	Heavy equipment purchase	14.02.00	432.8	
	La Romaine	Improvements to airport infrastructure	31.03.00	6,600.0	
	Val d'Or	Bird control system	05.07.00	55.2	
	Roberval	Heavy equipment purchase	11.07.00	359.0	
	Val d'Or	Redo roof of airport terminal	11.07.00	35.3	
	La Grande Rivière	Grader replacement	31.08.00	249.4	8,441.7
Ontario	Timmins	Rehabilitation of Airside Electrical	02.06.00	549.7	
	Timmins	Rehab. of Runways 03-21 & 10-28, etc	02.06.00	5,283.1	
	Kingston	Reconstruct ATB Apron & Taxi "B"	11.07.00	2,479.7	
	Windsor	Sand Spreader Truck with Snowplow	18.07.00	91.8	
	Windsor	Rehab. Runway 07-25 & Upgrade Airfield Lighting	28.09.00	2,206.3	10,610.6
Manitoba	Island Lake	Loader Replacement	20.01.00	251.5	
	Island Lake	Snow Blower Replacement	20.01.00	365.0	
	Little Grand Rapids	Grader Replacement	20.01.00	263.0	
	God's Lake Narrows	Snow Blower Replacement	20.01.00	365.0	
	Berens River	Grader Replacement	20.01.00	263.0	
	Berens River	Loader Replacement	20.01.00	251.5	
	Cross Lake	Grader Replacement	20.01.00	263.0	
	Cross Lake	Loader Replacement	20.01.00	251.5	
	Island Lake	Installation of PAPI	01.06.00	169.3	
	God's Lake Narrows	Installation of APAPI	01.06.00	138.6	
	Flin Flon	Airfield Lighting Upgrade	01.06.00	452.9	
	Brandon	Airside Pavement Rehab. and Related Projects	11.07.00	2,619.9	
	Thompson	Replacement of Runway Sweeper	27.09.00	136.7	5,790.9
Saskatchewan	La Ronge	Airside Pavement & Lighting Rehabilitation	14.02.00	4,801.3	4,801.3
Alberta	Lloydminster	Airside Pavement & Electrical Rehab.	18.02.00	2,008.2	
	Grande Prairie	Airside Rehabilitation Projects	01.06.00	2,702.6	
	Edmonton City Centre	Fibre Optic Signs	11.07.00	345.0	5,055.8
British Columbia	Fort St. John	PAPI Installation	26.01.00	181.5	
	Abbotsford	Mobile Equipment - Various	27.01.99	533.0	
	Abbotsford	Runway 07-25 Approach Lighting Upgrade	03.02.00	687.7	
	Cranbrook	Heavy Equipment - Loader & Sweeper	22.02.00	401.3	
	Terrace	Heavy Equipment - Runway Sweeper	23.02.00	163.0	
	Cranbrook	Airfield Electrical Upgrades	29.02.00	878.2	
	Smithers	Replace Snowplow Truck & Snowblower	07.03.00	531.5	
	Cranbrook	Gate Replacement Project	07.03.00	20.7	
	Kamloops	Install ODALS Runway 08-26	07.03.00	299.3	
	Smithers	Apron and Taxiway Rehabilitation	22.03.00	2,151.8	
	Terrace	Runway 33 - ODALS	01.06.00	164.3	
	Kamloops	Ducts and Cables	11.07.00	293.4	
	Prince Rupert	Runway 31 ODALS - Lighting Upgrade	09.08.00	223.7	
	Dawson Creek	Wildlife Control Fence	09.08.00	721.8	
	Fort Nelson	Runway Sweeper	09.08.00	206.6	
	Fort Nelson	Snowplow Truck/Reversible Plow Blade	09.08.00	166.2	
	Nanaimo	Wildlife Control Fence	10.08.00	196.4	
	Terrace	Replacement of Snowblower	10.08.00	405.6	8,226.0
Northwest Territories	Sachs Harbour	Rehab. Runway 08-26, Taxi "A" and Apron, etc.	21.07.00	1,680.2	1,680.2
Yukon					0.0
Nunavut	Arviat	Runway Snowblower Rehabilitation	07.03.00	213.5	
	Rankin Inlet	Runway Plow Truck Replacement	07.03.00	234.0	
	Rankin Inlet	Runway Sweeper Replacement	07.03.00	213.0	
	Whale Cove	Replacement of Airfield Lighting	27.03.00	436.5	
	Coral Harbour	Runway Plow Truck Replacement	04.04.00	234.0	
	Qikiqtarjuaq	Replacement of Airfield Lighting	05.04.00	449.0	1,780.0
				Total	47,849.2

Source: Transport Canada

STRUCTURE OF THE TRANSPORTATION INDUSTRY 11

In 2000, new shortline railways were created. Mergers and acquisitions were observed in the trucking industry. In the bus industry, the financial situation of Laidlaw, a major school bus operator and the largest scheduled carrier, attracted attention. The trend toward increased concentration in liner shipping continued. In the air industry, airline restructuring received extensive media coverage.

Competitive forces shape the evolution of the market structure of each mode of transportation. Factors such as price changes, financial results and changes in traffic levels are factors that come into play to explain the structure of each modal transportation industry.

This chapter presents an overview of Canada's transportation industry in the five modes — rail, trucking, bus, marine and air. It highlights the major events, including legislative changes.

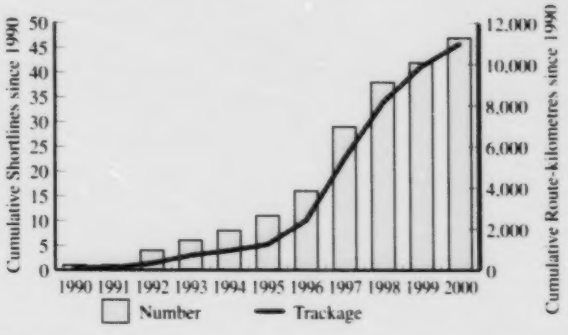
RAIL INDUSTRY

In large measure, the structure of the Canadian rail industry changed only modestly during 2000 compared with 1999. This is in marked contrast to the pace of change seen over the previous four years. Whether this is a signal that the restructuring of the rail system in Canada has plateaued remains to be seen.

As has been well documented, the Canadian rail system for many years consisted of the two Class I carriers, CN and CPR, along with a handful of regional carriers and a series of carriers conducting relatively limited operations.[1] This situation began to change during the late 1980s and early 1990s, when a small number of shortline[2] railways began operations. The number of new shortlines being created clearly began to accelerate with the introduction of the *Canada Transportation Act* in 1996, as is shown in Figure 11-1.

Since 1990, over 45 new railways have appeared, 16 at the federal level and 30 under provincial regulatory jurisdiction. These new railways have almost 11,000 route-kilometres of track and account for approximately $170 million in annual revenues, which represents about 2.2 per cent of total Canadian rail revenues for 1999. The majority of the increase in shortline trackage (60 per cent) belongs to the provincially regulated railways formed since 1990, while the majority of the revenues (60 per cent) recorded went to the new federally regulated railways.

FIGURE 11-1: SHORTLINE INDUSTRY GROWTH, 1990 – 2000



Source: Transport Canada

Although several new shortlines were created during 2000, there was only marginal change in the ownership structure of the shortline sector. A small Ontario carrier was exchanged among a number of the principal shortline corporations.[3] This did not, however, change the overall complexion of concentration in the shortline sector, where five corporations — RailAmerica Inc., OmniTRAX, Société des Chemins de fer du Québec, Genesee-Wyoming and Iron Road — controlled almost 85 per cent of the revenues earned by the 21 shortlines created since 1990 that they own.

1 Terminal and switching railways as well as US carriers operating into Canada.

2 The use of the term "shortline" railway developed in the United States following the passage of the *Staggers Rail Act* in 1980, which encouraged restructuring of the US rail system and led to the rapid formation of the shortline sector with almost 500 entrants.

3 RailAmerica transferred one of its properties (the L'Orignal) to the Société de Chemins de fer du Québec, with the former now controlling eight Canadian railways at the federal and provincial level and the latter now controlling five railways.

The structure of the rail passenger sector has remained unchanged for many years, with VIA Rail continuing to provide the bulk of the service offered in Canada. VIA Rail has about 95 per cent of the passenger-related activity (in terms of numbers of passengers carried and passenger-kilometres generated) and passenger-related revenues. Although it owns relatively little track itself (approximately 217 route-kilometres), VIA Rail has extensive running rights over other railways, principally CN.[4] Less extensive passenger services are offered by the Ontario Northland Railway, the Algoma Central Railway, the Quebec North Shore & Labrador Railway and BC Rail, while the Great Canadian Railtour operates seasonally between Vancouver, Calgary and Jasper. Amtrak, the US passenger rail corporation, offers service to several Canadian cities (Montreal and Vancouver, as well as Toronto in co-operation with VIA Rail) from its US network.

Perhaps the most noteworthy event during 2000 concerning the rail industry's structure was the decision of the US Surface Transportation Board to effectively sideline the proposed Canadian National/Burlington Northern Santa Fe combination by placing a moratorium on rail mergers in the United States until June 2001, at which time the STB is expected to issue guidelines for future mergers in the rail sector.

In August 2000, the city of Toronto acquired Union Station from CN and CPR. The federal government has committed $35 million towards the redevelopment of the station. Of this amount, $10 million would be contributed by VIA Rail, while the balance would be from funds previously provided to VIA's Asset Renewal Fund.

TRUCKING INDUSTRY

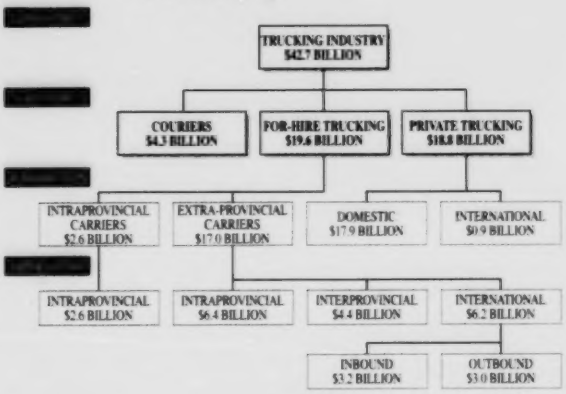
The trucking industry plays a significant role in the Canadian economy, accounting for substantial revenues and jobs across the country. Recent estimates indicate annual revenues of approximately $42.7 billion in 1999. There are an estimated 316,000 people working in trucking activities. There are also people working in other industry sectors who provide services to the trucking industry.

Intraprovincial activities — that is, transportation services offered strictly within a province — fall under provincial jurisdiction. Interprovincial activities pertain to transportation services offered from one province to another, while international activities refer to transportation services offered from a province to another country. Both interprovincial and international activities fall under federal jurisdiction and are often referred to as extraprovincial trucking. Extra-provincial trucking activities accounted for $17 billion in 1999, 86 per cent of total for-hire trucking revenues, but a significant part of these revenues, 38 per cent, were derived from intraprovincial operations.

There are 3.7 million trucks registered in Canada, many of which are pickups, vans and other small vehicles. Over 660,000 are trucks with a registered weight of 4.5 tonnes or more. Of these, approximately two-thirds haul freight commercially; these range from two- and three-axle straight trucks to 18-axle tractor-trailers. The other trucks are used in private trucking activities, including farming, government operations and a wide variety of utility and service functions.

Figure 11-2 shows the structure and revenues of the trucking industry in 1999.

FIGURE 11-2: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1999



Source: Statistics Canada, Cat. 53-222; "Profile of Private Trucking in Canada," L.P. Tardiff Associates, Jan. 1998; "Canadian Courier Market Size, Structure and Fleet Analysis Study"; Infobase Marketing Inc., January 2001

MAJOR EVENTS IN 2000

INTERNAL TRADE AND NATIONAL HARMONIZATION

In accordance with the provisions of the *Agreement on Internal Trade* calling for the elimination of economic controls on trucking, Part III of the *Motor Vehicle Transport Act* was repealed on January 1, 2000, following extensive consultations with provinces and stakeholders. This eliminated the possibility of any economic controls being imposed on extra-provincial truck operators. The

4 VIA Rail operates over about 9,430 kilometres of CN track, 540 kilometres of CPR track and 2,740 kilometres of track owned by various shortlines.

last vestiges of provincial economic regulation of intraprovincial trucking expired at the same time. Trucking is no longer subject to entry or tariff control regulation in any part of Canada.

North American Free Trade Agreement (NAFTA)

NAFTA's Land Transportation Standards Subcommittee (LTSS)[5] for truck operations completed work on a number of driver standards issues through a series of agreements on operating requirements. Further work toward the compatibility of vehicle, driver and operator standards continued during 2000. Discussions focused on issues such as motor carrier safety performance, rule-making activities, the development of a directory of safety officials and contact procedures, dangerous goods standards, and the publication of a North American Emergency Response Guidebook.

On November 29, 2000, the NAFTA Arbitration Panel issued a confidential interim ruling rejecting the US law that prevents Mexican trucks from operating in the US beyond 20 miles of the US–Mexico border.

On February 7, 2001, the NAFTA Arbitration Panel issued a final ruling that clears the way for Mexican trucks to obtain operating authority to operate in the US beyond the current restriction of operating within 20 miles of the US–Mexico border. In summary, the ruling stipulated that

- The US should look at applications on a case-by-case basis to determine if the Mexican carriers meet US safety standards;
- The US is entitled to set its own motor carrier safety standards and ensure that Mexican trucking companies and truck drivers meet those standards;
- If there are differences between US and Mexican regulatory regimes, the US does not have to treat applications from Mexico the same as those from Canada or the US.

The US and Mexico must now agree on a set of comprehensive motor carrier safety standards, establish and test effective enforcement programs and staff border facilities with full-time inspectors.

Vehicle Weights and Dimensions

In Canada, an interjurisdictional Task Force on Vehicle Weights and Dimensions Policy, reporting to the Council of Deputy Ministers Responsible for Transportation and Highway Safety, deals with the question of vehicle size and vehicle weights. The task force looks at co-ordinating policy through collective action and acts as a forum for the exchange of information on provincial initiatives.

After several years of discussion, Ontario and Quebec reached an agreement in 2000 on harmonizing weight and dimension limits for specific tractor-trailer configurations that commonly operate between the two provinces. The new limits will result in safer and more stable vehicles that contribute less wear to highway infrastructure. The agreement also simplifies vehicle standards, thus facilitating fleet management, increasing competitiveness and facilitating compliance.

Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island developed a proposal for uniform vehicle weight and dimension regulations within Atlantic Canada. Consultations were held with stakeholders in early 2000, and a proposed agreement was drafted and sent to the four governments for consideration and endorsement.

In western Canada, Manitoba, Saskatchewan, Alberta and British Columbia have been working closely with stakeholder groups to develop a proposal for harmonization of special permit requirements within western Canada for heavy haul and overweight loads and to develop common requirements for movement of specialized equipment under permit.

Industry Events — Alliances/Mergers

Every year, a number of mergers and acquisitions of motor carriers takes place, and 2000 was no exception. Among those involving some of the larger Canadian carriers are the following:

- **TCT Logistics** of Calgary purchased Kleysen Transport's van and temperature-controlled highway transport operation and the Tri-Line Trucking Group. The Tri-Line Group provides full load van and flatbed trailer services and has annual revenues of $130 million. Kleysen's operations generate $45 million annually from 180 trucks, of which 48 are company-owned and 132 are owner-operated, and 375 trailers. The sale of Kleysen's van operation was viewed by Kleysen's President and Chief Operating Officer, Tom Kleysen, as a strategic move that will allow the company to focus on areas where its existing transportation business has higher growth and profit potential and where it already has a strong market niche.

5 A committee mandated to develop compatible technical standards to improve safety and efficiency of bus and truck operations, rail operations, and the transportation of dangerous goods. The three parties to the Agreement also established a Transportation Consultative Group (TCG) to address non-standards-related issues (i.e. cross-border operations and research and development).

- **Kleysen Transport Ltd.**, as part of its move to become an integrated transportation solutions company, is expanding its flatdeck, bulk and intermodal operations, and its repair and maintenance business. It invested $6 million in its Calgary Distribution Centre and fleet services facility and an additional $4.2 million in its Kayway Fleet Services facility in Winnipeg. The facility is one of the largest in western Canada, providing everything from tires and engine overhauls to bodywork and metal fabrication.
- **Kayway Logistics**, the third-party logistics affiliate of Kleysen Transport, and Crosslink Distribution, of Tibbett and Britten, have merged their operations. The move will help Kayway to develop improved supply chain processes to the retail grocery market.
- **TransForce Inc.** of Saint-Laurent, Quebec, acquired Entreprises R.R. Mondor, a company specializing in flatbed transport in the domestic and transborder markets. Enterprises R.R. Mondor will be a wholly owned subsidiary of TransForce, retaining its current name and management structure. This acquisition will add approximately $13 million in sales to TransForce, as well as a fleet of about 100 tractor-trailers. TransForce and its subsidiaries form a network of less-than-truckload (LTL), truckload, logistics and warehousing operations across Canada and the United States.
- **TransForce Inc.** also acquired all the shares of DCA Express 24 Inc. and Distribution de Colis les Appalaches Inc., two companies specializing in express delivery of parcels and envelopes, primarily in Quebec, Ontario and the Maritimes. Their yearly sales are close to $10 million and their combined fleets have some 150 units. Both companies join TransForce as wholly owned subsidiaries and will operate independently under their existing names.
- **Clarke Inc.**, of Etobicoke, Ontario, and Canadian National (CN) Railway Company, launched a third-party joint venture that offers shippers seamless rail and over-the-road freight transportation and logistics services throughout North America. Clarke Logistics Inc. allows CN to offer shippers one-stop shopping for freight shipments to and from all points in Canada, the United States and Mexico. This will strengthen Clarke's existing intermodal and highway brokerage business between the three countries.
- **Trimac Transportation Services Corp.** of Calgary acquired Ross Trucking Ltd. of Boiestown, New Brunswick, a transporter of woodchips and related forest products servicing markets in Quebec, the Maritimes and the northeastern United States. The acquisition will further enhance Trimac's presence in both the forestry products industry and the Maritimes.

In transborder operations, in addition to mergers with or acquisitions of US-based carriers, Canadian carriers use partnerships with US-based carriers to penetrate the US market. These alliances not only expand the carriers' market, they allow the carrier to redesign the way the Canada–US market is served, allowing, for instance, the carrier to offer such services as overnight, next-day and second-day delivery over a much broader territory. Such alliances can also lead to the integration of carriers' information systems and the sharing of invoicing and inventory control systems. A number of mergers, acquisitions and alliances of carriers on both sides of the Canada–US border took place in 2000. Some examples include:

- **Trimac Transportation Services Corp.** sold its truck-leasing subsidiary Rentway to Penske Truck Leasing of Reading, Pennsylvania, for $105 million, giving the US company an immediate presence in the Canadian truck rental business and allowing Trimac to focus on its bulk trucking business.
- **Trimac Transportation Services Corp.** acquired Initial DSI Transports Inc. of Houston, Texas, for US$68 million. DSI is a hauler of chemicals, petroleum and dry bulk products, with annual revenues of US$156 million in 1998. The company has 34 terminals in the United States and operates a fleet of more than 900 tractors and 1,350 trailers. This acquisition will provide opportunities for growth and improved operational efficiencies due to the complementary nature of Trimac's existing US terminal locations and traffic lanes.
- **Clarke Inc.** acquired a distribution facility in Los Angeles and opened new offices in Mexico City and Queretaro, Mexico. Increased trade between Mexico and Canada, as well as increased demand within North America for premium-service expedited freight services, prompted the move. Clarke wants to be strategically located to capture new growth opportunities in this region.
- **Con-Way Canada Express**, headquartered in Mississauga, Ontario, was formed in January as a separate operating unit of US-based Con-Way Transportation Services to meet the growing demand for less-than-truckload (LTL) services within Canada and throughout North America. It expanded its operations into five more provinces in June 2000 and has direct LTL services to 22 of the 25 major urban centres in Canada. Company spokespeople say that this increased coverage in Canada will allow four-day delivery between the major urban areas on both coasts. Drivers employed by Con-Way Central Express, the company's US parent, drive the goods to Canada, and

Con-Way Canada drivers then pick up the trailers for final delivery across the country. Increased customer demand, NAFTA, and growth in just-in-time delivery, were all factors in this decision to expand.

A significant business activity emerging in the trucking industry is the combining and streamlining of various companies' logistics operations. Supply chain integration is important because it allows smoother operations and greater efficiency while improving customer satisfaction. Companies are finding new and innovative ways to store, move and deliver products, services and information. Third-party logistics firms (3PLs) have become enablers for the complex task of integration. As a result, many shippers seek out the services of 3PLs to improve their overall supply chain performance. Some examples of this new business activity include the following:

- Six of the largest truckload carriers in the United States agreed to combine their logistics operations into a new Internet-based transportation logistics company called **Transplace.com.** The on-line venture is aimed at creating a one-stop shopping centre for transportation services by merging the non-asset logistics services of J.B. Hunt Transport Services, Werner Enterprises, Swift Transportation, M.S. Carriers, US Xpress Enterprises and Covenant Transport. The business will use Web technology to better match freight-hauling capacity and demand, and will function as a clearinghouse, or exchange, where shippers and carriers can see and bid on loads. Last year, these six carriers had total revenues of US$5.9 billion. Initially, Transplace intends to focus on truckload, refrigerated and intermodal capabilities but will expand its services to include less-than-truckload, package and parcel, air, cartage and home delivery by forming partnerships with other companies throughout the world.
- **General Motors Inc.** and **CNF Transportation** formed a joint-venture logistics company called Vector SCM, which has the objective of eventually taking control of GM's entire $6 billion annual transportation spending. Vector is to have total responsibility for GM's logistics around the world, with a transition planned in steps, the first being GM's North American logistics operations. All existing logistics contracts with GM are to be transferred to Vector. Transportation decisions to be dealt with by Vector and submitted to GM logistics range from ocean, air, truck, warehousing, freight-bill auditing and any other part of the supply chain where cost savings can be generated. The objective is to cut current inventory, worth billions of dollars, by 50 per cent.

Trucking Issues in 2000

Insurance — Insurance costs continued to increase on both sides of the Canada–US border in 2000, forcing trucking companies to take a closer look at loss-prevention strategies and risk-management practices to ease rising insurance costs.

Hours of Service Regulations — Canada and the United States both introduced preliminary proposals to change the regulations that place limits on the number of hours that truck drivers can be on the road. The American proposals, which are significantly more complicated, are under considerable opposition and on hold until October 2001. In Canada, the proposed changes to the National Safety Code Hours-of-Service Standard are being drafted and will be submitted for public consultations. Amendments to the regulations will be made only after the approval of the new standard, sometime in 2001.

Diesel Fuel Prices — Road diesel price increases started in the third quarter of 1999 and continued until the second quarter of 2000. Prices stayed at these high levels throughout the rest of 2000. These increases sparked protests in some regions of the country and resulted in the creation of at least two new owner-operator associations. Owner-operator groups, particularly in Ontario, sought government intervention to ensure that they benefited from the fuel surcharges negotiated between large carriers and shippers.

Several provincial governments sought to encourage dialogue among owner-operators, shippers and carrier groups to resolve the fuel surcharge and related compensation and working condition issues. Ontario established the Ontario Truck Industry Working Group (OTIWG), which, in October 2000, was successful in developing fuel surcharge guidelines, including a formula for calculating fuel surcharge rate increases. The National Trucking Alliance (NTA) accepted this solution. The OTIWG has also developed a proposal for creating a dispute resolution office to deal with disputes between owner-operators and carriers. The province wants a temporary, two-year informal and voluntary dispute resolution process.

Newfoundland provided seed money for a provincial owner-operator association in February 2000 and facilitated meetings with shippers and carriers that resulted in agreement on a fuel surcharge. Quebec established a *Comité des experts* to mediate owner-operator issues in 1999 and has been trying, so far unsuccessfully, to establish a permanent trucking forum with carrier, shipper, union and owner-operator representatives to deal with owner-operator issues.

The Port of Vancouver responded to owner-operator pressures, partly arising from waiting times, by enacting a licensing system for truck access in 1999. This system included provision for an hourly wage rate for truckers while working in the port. This move was bitterly opposed by the carriers and the provincial carrier association. The hourly wage provisions of the scheme, however, were abandoned in December 2000.

Driver Shortage — Trucking companies in Canada, as in the United States, face the growing problem of a shortage of drivers. This issue is driven by a number of factors: the trucking sector has typically been associated with relatively low wages that are, on average, about two thirds of those in the rail sector; there is an aging workforce; the traditional pool from which drivers were recruited (individuals with limited post-secondary education) is eroding and no longer large enough to meet demands; the required qualifications are more demanding due to the increasing use of sophisticated technology and the increased focus on safety compliance; and there is better paying and less demanding work elsewhere in a strong economy with relatively low unemployment.

The driver shortage issue, according to industry sources, has to do not only with pay considerations but also with lifestyle issues. In an effort to attract and retain drivers in the United States, some companies have started to offer free Internet and cable access and better amenities at truck stops, as well as to allow team driving to permit spouses or other family members to accompany drivers. The challenge for the industry is to ensure that working conditions, wage levels and training opportunities are compatible with the need for higher skills demanded of drivers.

Michigan Single Business Tax — Effective January 1, 2000, after a moratorium of several years, the Michigan Single Business Tax (SBT) was revived against foreign transportation companies providing services into Michigan from a foreign base. Because of the significant impact this tax would have on Canadian carriers, the trucking industry, in co-operation with the federal and provincial governments, entered into discussions with Michigan state authorities concerning the application of the tax to the Canadian trucking industry.

The Single Business Tax base, on which the tax is calculated, consists of three main components: a company's net income; the compensation and benefits paid to the company's employees; and all capital items such as depreciation, interest dividends and royalties. A company must apply this tax base to the relative importance of its activities occurring in Michigan, the basis being revenue miles. The tax is applied after a standard exemption of $45,000.

In a measure specifically enacted for the benefit of Canadian trucking firms, the State of Michigan revised its SBT legislation on December 11, 2000, to provide favourable treatment to Canadian carriers. Under the new law, Canadian carriers are given two choices for reducing the amount of employee compensation included in the tax base: reduce compensation paid to employees by a flat 50 per cent; or use a formula whereby the compensation is multiplied by the allocation of revenue miles travelled in Michigan.

It is estimated that the new law will reduce the tax base, on average, by 35 per cent for Canadian carriers.

Trade Corridors — Canadian interest in corridor and border issues has increased in recent years, prompted by strong growth in trade with the United States and Mexico. The US *Transportation Equity Act for the 21st Century* (TEA-21) has also served to focus attention on borders and trade corridors. A significant development has been the emergence of public–private international alliances that act as advocates for specific corridors and also help facilitate initiatives to promote optimum corridor use.

Transport Canada is working with various agencies and departments to develop a coherent national approach to transportation corridors. The underlying premise is to ensure a degree of co-ordination among various programs, initiatives and policies that have a bearing on this area. One of the underlying principles guiding this effort is that of bi-national collaboration. In addition to working closely with other Canadian agencies, Transport Canada maintains an ongoing dialogue with its US counterparts. Recent discussions have focused on the need to co-ordinate efforts in areas related to border gateway infrastructure, deployment of transportation technology, interoperability of Intelligent Transportation Systems (ITS) and collaboration on research and data collection.

Information Technology/E-commerce — E-commerce is expected to have a significant impact on distribution patterns and, by extension, on the role of the trucking industry. E-commerce requires participants to embrace information technology systematically. It also requires a degree of standardization in information technology, which at present is uneven among carriers.

CHARACTERISTICS OF THE TRUCKING INDUSTRY

Trucking is a highly diversified industry of more than 13,700 freight carriers, including 10,800 for-hire carriers with annual revenues exceeding $30,000, 500 private carriers with annual operating expenses exceeding $1 million, and 2,400 courier companies. These numbers do not include small for-hire carriers earning less than $30,000 annually, small private carriers with less than $1 million in operating expenses, or organizations such as farms, utility companies and municipalities that own and operate trucks. Another 40,000 owner-operators with annual revenues exceeding $30,000 contract services to both private and for-hire carriers or operate independently.

A number of factors differentiate trucking firms:

- their size, which can be defined in numerous ways, such as the number of power units operated;
- the type of equipment they use, such as logging trucks, hopper-bottom grain trailers, cement mixers, general purpose vans, flatdeck trailers;
- the geographic coverage of their operations, whether intraprovincial, interprovincial or international, such as to and from the United States;
- the type of services they offer, whether, for example, truckload service (full load/single shipper) or less-than-truckload service (multiple shipments from multiple shippers); and
- the intramodal and/or intermodal alliances they have.

The trucking industry offers two major types of services: for-hire trucking and private services. For-hire trucking services are transportation services offered in return for compensation. They can be further broken down in terms of truckload (TL) or less-than-truckload (LTL) services, but a firm can also offer a mix of the two and can offer to operate in domestic or international markets. For-hire trucking services can be further categorized according to the types of freight carried, notably:

- *General freight carriers*, which handle different types of freight in vans and general-freight trailers;
- *Household goods carriers*, which use specialized trailers to transport furniture and other personal household possessions;
- *Liquid bulk carriers*, which use tanker trucks to transport liquids such as petroleum, milk and chemicals;
- *Dry bulk carriers*, which use dump or hopper-bottom trailers to haul goods such as grain, fertilizer and gravel;
- *Forest products carriers*, which use special logging trucks to transport logs from the forest to the mill; and
- *Other specialized freight carriers*, which include auto haulers using special trailers to transport vehicles to the dealerships, and couriers that use a variety of types of trucks to transport small parcels and mail.

Table 11-1 compares the revenues of for-hire trucking firms by the type of freight carried.

TABLE 11-1: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1997 – 1999

	Revenue (Millions of dollars)			*Per cent of total*		
	1997	*1998*	*1999*	*1997*	*1998*	*1999*
General Freight	8,363.0	8,902.0	10,064.4	58.6	59.8	62.2
Dry Bulk	971.0	1,091.8	1,189.6	6.8	7.3	7.4
Liquid Bulk	1,235.0	1,069.6	1,013.1	8.7	7.2	6.3
Forest products	794.1	721.4	828.8	5.6	4.8	5.1
Housegood Movers	523.2	454.8	466.6	3.7	3.1	2.9
Other Specialty Freight	2,385.0	2,648.5	2,618.3	16.7	17.8	16.2
Total	**14,271.3**	**14,888.1**	**16,180.7**	**100.0**	**100.0**	**100.0**

Note: For-hire trucking firms with annual earnings of $1 million or more.

Source: Statistics Canada, "Annual Supplement (Q5) Survey, 1997-99.

Private trucking services are transportation services offered by a company that is transporting its own goods. They are an integral part of a company's distribution network, often providing a logistical support service to the companies that own them. These companies tend to be retail distributors for consumer goods, chemical products producers, pulp and paper companies, beverage distributors and wholesale distributors of agricultural products.

In addition to carrying their own goods, private carriers, especially those looking after long haul needs with their tractor-trailers, can obtain operating authorities to haul goods on a for-hire basis for others. With such operating authorities, they in fact compete with for-hire trucking firms. Furthermore, these companies with private truck fleets can also use for-hire carriers for some of their freight transport needs. The differences between private and for-hire carriers are becoming increasingly blurred as private carriers compete with for-hire carriers for loads on their back haul trips to reduce their empty kilometres.

MAJOR COMPONENTS OF THE TRUCKING INDUSTRY

General freight carriers dominated the for-hire sector, accounting for over 60 per cent of for-hire revenues in 1999.

TABLE 11-2: TOP 50 FOR-HIRE CARRIERS BASED ON NUMBER OF VEHICLES, 2000

Rank	Name of Carrier	Total Vehicles[1]	Total Employees
1	TransForce	4,930	2,525
	- Cabano Kingsway Transport	2,338	1,550
	- Groupe Papineau	1,518	509
	- Thompson's Transfer	453	238
2	Trimac Transportation Services	4,435	2,416
3	SLH Transport	3,795	1,050
4	Paul's Hauling Group	3,757	1,669
	- Paul's Hauling	1,221	352
	- Westcan Bulk Transport	1,593	507
	- Gardewine North	943	810
5	TransX	3,751	1,864
6	Mullen Transportation Inc.	3,530	2,109
	- Mullen Trucking	1,049	776
	- Cascade Carriers	632	248
	- Grimshaw Trucking	443	268
	- Mill Creek Motor Freight	855	522
7	Contrans Corp.	3,520	1,655
	- Brookville Transport	1,222	585
	- Laidlaw Carriers	1,692	842
	- Christie Transport	403	147
8	Robert Transport/Groupe Robert	3,390	1,745
9	Clarke Inc.	3,325	1,900
10	J.D. Irving Ltd.	3,070	2,144
	- Midland Transport	1,570	1,413
	- RST Industries	470	226
	- Sunbury Transport	1,030	505
11	Day & Ross Transportation Group	2,936	3,761
	- Day & Ross	1,959	2,146
	- Fastrax	420	239
12	Schneider National Carriers Canada	2,800	765
13	Westminster Holdings	2,560	2,030
	- Highland Transport	2,175	655
14	Armour Transportation System	2,371	1,349
15	Allied Systems Canada	2,300	1,560
16	Challenger Motor Freight	2,116	760
17	BLM Group Inc.	2,089	1,350
18	Kindersley Transport Group	2,086	1,021
	- Kindersley Transport	1,668	838
19	Canadian Freightways Group	2,080	N/A
	- Canadian Freightways	1,082	N/A
20	Gerth Transport	2,041	680
21	Tri-Line Group	1,820	812
	- Tri-Line Expressways	1,667	671
22	XTL Transport	1,785	680
23	Reimer Express Lines	1,668	1,717
24	TCT Logistics	1,664	1,450
25	Bison Transport	1,648	721
26	TST Solutions Inc. Group	1,614	1,474
27	Vitran Corp.	1,604	1,022
28	Wilson's Truck Lines	1,556	400
29	SGT 2000	1,532	635
30	FTI Inc. Canada	1,500	330
31	Canada Cartage System	1,383	668
32	H&R Transport	1,380	1,075
33	Arnold Bros. Transport	1,376	759
34	Landtran Systems	1,374	770
35	Yanke Group	1,357	845
36	Verspeeten Cartage	1,347	473
37	Kleysen Transport	1,345	800
38	Bruce R. Smith Ltd.	1,335	480
39	Hunterline Group	1,269	472
	- Hunterline Trucking	426	342
	- Front Runner Freight	843	N/A
40	Erb Group of Companies	1,262	1,021
	- Erb International	473	191
	- Erb Transport	789	830
41	Guilbault Transport Group	1,249	665
42	Manitoulin Transport Group	1,201	N/A
	- Manitoulin Transport	701	N/A
43	Cooney Group	1,175	330
44	Quik X Transportation	1,170	880
45	Thibodeau Transport Group	1,158	644
46	Purolator Courier	1,123	13,022
47	Canadian American Transportation	1,053	383
48	Penner International	1,038	333
49	Seaboard Liquid Carriers	980	N/A
	- Harmac Transportation	650	275
50	Kriska Transportation	964	461

Note: The data are presented as in the source. Data does not always add up to the total because some of the smaller subsidiaries are excluded due to lack of information. Some of the mergers described earlier in this section were not included in the article as it was published prior to the takeover.

1 Total Vehicles includes trucks, tractors and trailers, including owner-operator equipment, domiciled in Canada.

Source: Today's Trucking, March 2000, "Canada's Top 100 For-Hire Fleets, 2000."

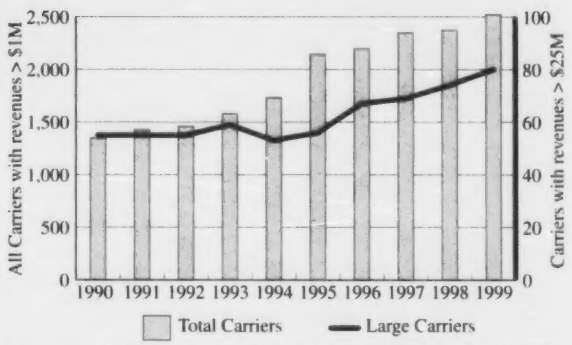
Table 11-2 ranks Canadian-based for-hire trucking firms based on the size of their fleet. The Table also shows the number of employees for each company and their affiliates.

Figure 11-3 presents the number of for-hire carriers earning annual revenues of $1 million or more between 1990 and 1999. The total number of for-hire carriers has increased since 1990. Part of this increase is due to a new frame used by Statistics Canada since 1995 to conduct its trucking survey. The number of very large carriers, those with more than $25 million in annual revenues, has fluctuated between 55 and 80 over this period.

Table 11-3 shows the percentage share of total for-hire trucking revenues by size of carrier from 1991 to 1999 under the following categories: carriers that earn $25 million or more annually; $12 to $25 million; $1 million to $12 million; and less than $1 million.

From 1991 to 1995, revenues generated by carriers earning more than $25 million as a percentage of total industry revenues steadily decreased, while the actual number of carriers in this category remained relatively stable. This suggests a decreased level of concentration of the industry over that period. The proportion of their revenues to total industry revenues declined from

FIGURE 11-3: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF $1 MILLION OR MORE, 1990 – 1999



Source: Statistics Canada, Annual For-Hire Carriers Survey, 1990–1993; Annual Supplement (Q5) and the Quarterly Motor Carriers of Freight Survey, 1994–1999

33 per cent in 1991 to 25.1 per cent in 1995. This proportion remained stable at 25.7 per cent over the next two years then increased to 28.2 per cent by 1999 reflecting the increased level of acquisitions and mergers in the trucking industry over the past two years.

Over the same period, 1991 to 1995, there was a corresponding increase of 10 per cent in the share of revenues generated by carriers earning between $12 million and $25 million. This proportion has decreased somewhat over the last two years from 21.8 per cent in 1997 to 16.7 per cent in 1999.

The share of total industry revenues earned by carriers making between $1 million and $12 million fluctuated around 40 per cent between 1991 and 1999. The small carriers earning less than $1 million saw their share of industry revenues increase to 17 per cent in 1999.

COURIERS

In 2000, the total Canadian courier market, which is defined as all letters, envelopes, paks (plastic pouches designed to accommodate large documents or small parcels) boxes and cartons originating within Canada, had an estimated $4.7 billion in revenues. Approximately 2.1 million packages were handled by the courier industry each day and the average revenue per package was $8.88.

The courier industry has two major segments:

- *Overnight or later delivery shipments* are delivered at least one day following the day they are picked up. This segment was valued at $4.0 billion and carried 1.6 million packages per day in 2000, this segment representing 85 per cent of total courier revenues and 78 per cent of volume. This segment is highly concentrated among nine major carriers, which together represent 85 per cent of overnight or later revenues. These carriers include: Canada Post, Canpar, DHL, FedEx Express, FedEx Ground, Loomis, Purolator, TNT Express Worldwide and United Parcel Service.
- *Sameday messenger delivery shipments* are delivered the same day they are picked up. This segment was valued at $687 million and carried 446,000 packages per day in 2000, representing 15 per cent of total courier revenues and 22 per cent of volume. This market is highly fragmented, with the top nine companies accounting for less than 20 per cent of total sameday messenger revenues.

The domestic lane, or those packages associated with shipments that originate and are delivered to locations in Canada, accounts for the majority of courier business in Canada. In 2000, the domestic portion of the industry

TABLE 11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1999

	Medium Carriers ($1 – 12 million)		*Large Carriers ($12 – 25 million)*		*Top Carriers (Over $25 million)*		*Small Carriers (Less than $1 million)*		*Grand Total*
Year	*Revenue (millions of dollars)*	*Share (per cent of total)*	*Revenue (millions of dollars)*	*Share (per cent of total)*	*Revenue (millions of dollars)*	*Share (per cent of total)*	*Revenue (millions of dollars)*	*Share (per cent of total)*	*Revenue (millions of dollars)*
1991	4,028.8	40.3	1,107.6	11.1	3,298.2	33.0	1,562.4	15.6	9,997.0
1992	4,217.4	41.8	1,072.2	10.6	3,256.1	32.3	1,537.3	15.2	10,082.9
1993	4,542.9	41.0	1,268.0	11.4	3,411.1	30.8	1,868.2	16.8	11,090.2
1994	5,212.8	40.4	2,208.5	17.1	3,541.4	27.5	1,929.9	15.0	12,892.6
1995	5,460.6	38.3	3,090.0	21.7	3,576.9	25.1	2,113.4	14.8	14,240.9
1996	5,731.8	37.6	3,453.2	22.7	3,917.7	25.7	2,127.1	14.0	15,229.8
1997	6,530.4	40.1	3,553.1	21.8	4,187.7	25.7	2,017.0	12.4	16,288.2
1998	6,591.6	36.8	3,280.5	18.3	5,015.9	28.0	3,017.5	16.9	17,905.5
1999	7,429.7	38.1	3,248.2	16.7	5,502.8	28.2	3,320.0	17.0	19,500.7

Note: Including motor for-hire carriers of freight earning annual revenues of $30 thousand or more

Source: Transport Canada based on Statistics Canada, Annual Motor Carriers of Freight Survey (AMCF) 1990–99; Annual Supplement (Q5) to the Quarterly Motor Carriers of Freight Survey (QMCF) 1994–99; 1999 small carriers' revenues estimated by Transport Canada

INTERMODAL TRANSPORT SYSTEMS

Intermodal transport is growing, and new forms of intermodal technology may assist this growth. The RoadRailer system (where modified highway trailers are placed on rail and pulled as trains) has been in operation for a number of years, and it has now been joined on a trial basis by the Iron Highway and the Canadian-developed system used by Ecorail.

The Iron Highway is a form of piggyback that provides a module containing two power units and a continuous deck of 1,200 feet (366 m) that can accommodate up to 20 53-foot-long (16 m) trailers. Several modules can be connected to form a conventional-length train. This system is designed to attract piggyback traffic from for-hire and private truckers and is best suited for medium-length hauls between urban areas.

Like RoadRailer, the Ecorail operation is based on carless operation; that is, the highway trailer or container chassis is used as the rail car. For movement by rail, bogies are placed under each end of the trailer. This technology is designed to be transferable anywhere the tracks are level with a road surface; it does not require specialized unloading facilities or equipment. It is hoped that this system will prove useful for remote locations.

accounted for 95 per cent of total volume and 84 per cent of total revenue.

Canada also receives a significant amount of courier shipments from the United States and other countries around the world. In the year 2000, the size of the Canada inbound courier market is estimated at US$1.3 billion and 58.1 million packages carried (with the United States accounting for over 80 per cent of this total).

A number of key trends are affecting the courier industry in 2000, including growth due to the Internet; a growing number of competitors seeking Internet direct based "direct ship" business; continued adoption of technology to reduce costs and increase customer service; more stable pricing; continued mergers and acquisitions; and increasing challenges in attracting and retaining staff.

Table 11-4 shows Canadian courier companies' activities, in terms of revenues and volume in the last three years.

TABLE 11-4: CANADIAN COURIER COMPANIES, ESTIMATED VOLUME AND REVENUES, 1998–2000

Year	*Daily Volume (Thousands of packages)*[1]	*Annual revenues ($ million)*	*Average revenue per package*
1998	1,906	3,995	8.32
1999	2,001	4,311	8.55
2000	2,091	4,658	8.88

1 Including "Same day" and "Next day" shipment services, based on business days (252 days in 1998 and 1999, 251 days in 2000).

Source: Canadian Courier Market Size, Structure and Fleet Analysis Study, Infobase Marketing Inc., January 2001

OWNER-OPERATORS

Owner-operators are another important component of the trucking industry. They work under contract for either for-hire or private carriers, typically using their own tractor. In 1998, there were over 41,000 owner-operators in Canada; just over half were under contract to Ontario and Quebec-based carriers and a further one-third were concentrated in Alberta and British Columbia. Just under 80 per cent of the owner-operators are under contract to for-hire carriers.

Table 11-5 presents the number of owner-operators under contract by carrier type, as well as their revenues by province for 1998.

TABLE 11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIERS, 1998

Province of domicile	Number of Owner-Operators working for: *For-hire Carriers*	*Private Carriers*	*Both*	*Total*	*Operating Revenues ($ millions)*
Newfoundland	339	112	28	479	65.4
Prince Edward Island	94	49	9	152	33.5
Nova Scotia	698	213	114	1,025	154.0
New Brunswick	1,223	342	92	1,657	269.4
Quebec	4,173	1,651	408	6,232	978.0
Ontario	10,535	3,300	1,064	14,899	2,035.5
Manitoba	1,896	314	150	2,360	333.8
Saskatchewan	1,456	473	139	2,068	320.9
Alberta	4,109	1,547	656	6,312	1,032.1
British Columbia	3,588	1,347	866	5,801	827.2
Yukon	21	22	8	51	8.3
Northwest Territories	17		4	21	3.0
Total Canada	**28,149**	**9,370**	**3,538**	**41,057**	**6,061.1**

Source: Statistics Canada, Surface and Marine Transport Bulletin, Cat. 50-002

BANKRUPTCIES

The number of bankruptcies in the trucking industry generally follows a pattern similar to that for the whole economy, although there are some periods with some differences. As shown in Table 11-6, trucking bankruptcies dropped rapidly between 1991 and 1994, stabilized in 1995, then increased in 1996 and 1997. Following a decline in 1998, there was another increase in the level of bankruptcies in the trucking industry in 1999 followed by another increase in 2000.

Bankruptcies or other exits from the trucking industry do not have a significant impact on the provision of freight services. The majority of truck bankruptcies involve small one- or two-truck operators and also include companies involved with activities ancillary to trucking services.

Figure 11-4 shows the number of bankruptcies in the trucking industry versus those in the total economy between 1990 and 2000.

CANADIAN COURIER INDUSTRY MARKET SIZE, STRUCTURE AND FLEET ANALYSIS STUDY

A 2000 study sponsored by the Motor Carrier Policy Branch of Transport Canada, the Canadian Courier Industry Market Size, Structure And Fleet Analysis Study, provides detailed information about how the size and structure of the Canadian courier market has changed over the past two years and what key factors affect growth and major market trends. It also provides a comprehensive snapshot of the fleets used by Canadian courier companies.

Using a combination of primary and secondary data gathering methodologies, the report concluded that an estimated 527.0 million packages (that weigh less than 150 lbs. each) generating annual revenues of $4.7 billion were delivered by Canadian couriers in the year 2000.

Total industry compound annual growth between 1998 and 2000 is estimated at 4.7 per cent for volume and 8.0 per cent for revenue. The strong performance of the Canadian economy on both an export and domestic basis is the primary reason for this robust growth.

The courier industry may be broken down into two major segments;
- *Overnight or Later Delivery shipments* delivered at least one day after the day they are picked up. This segment of the market includes shipments delivered within Canada, to the United States or to other countries around the world.
- *Sameday Messenger shipments* delivered the same day they are picked up. By definition, these tend to be primarily local and/or regional deliveries.

The overnight or later segment of the market accounts for the majority of total courier industry activity (79 per cent of volume and 85 per cent of revenue). Other key facts regarding the size and structure of the industry include the following:
- *Domestic shipments*, or those that are picked up and delivered within Canada, represent 95 per cent of volume and 84 per cent of revenue.
- *Express shipments*, or those that are delivered either the same day they are picked up, or overnight by noon, are fully tracked and feature a delivery guarantee. They represent 25 per cent of volume and 55 per cent of revenue.
- *Boxes* (as opposed to letters) represent 76 per cent of volume and 80 per cent of revenue.
- *Provincial share of market* closely approximates the distribution of Gross Domestic Product, with Ontario accounting for 46 per cent of all industry activity, followed by Quebec at 21 per cent and British Columbia at 14 per cent.
- Although there are an estimated 2,400 courier companies operating in Canada, the market is heavily concentrated among a number of "tier 1" competitors (defined as companies with annual revenues in excess of $25 million). Tier 1 competitors hold 68 per cent share in terms of industry volume and 63 per cent of revenue.

Canada also receives a significant amount of courier shipments from the United States and other countries around the world. In the year 2000, the size of the Canada inbound courier market is estimated at US$1.3 billion and 58.1 million packages (with the United States accounting for over 80 per cent of this total).

In the year 2000, a total of 24,700 vehicles are estimated to be involved in the pickup and delivery of courier shipments in Canada. Step vans make up the majority (52 per cent) of the Canadian courier industry fleet, followed by cargo vans (20 per cent). Other key aspects of the Canadian courier industry vehicle fleet include the following:
- Over half (or almost 53 per cent) are company-owned (the rest are either independently owned or leased).
- On average, each vehicle travels 51,239 kms/year.
- Gasoline accounts for the majority (58 per cent) of fuel purchases, followed by diesel at 37 per cent.
- Approximately 64 per cent of vehicles utilize some type of on-board vehicle technology. Cellular Data and Radios are the most common (present in 45 per cent and 23 per cent of vehicles respectively).
- The overall average vehicle age is 4.9 years.
- The average capacity utilization, or percentage of total allowable weight that can legally be carried, is 68.7 per cent.
- The large majority of miles travelled are within Canada (over 95 per cent).
- Fuel accounts for over 50 per cent of total fleet operating costs (excluding driver wages and benefits).

Between 2000 and 2003, the total Canada origin (excluding inbound) courier market is forecast to grow to $5.8 billion in annual revenues and 604.8 million packages. In percentage terms, this equates to a compound annual growth rate of 7.5 per cent for revenue and 4.3 per cent for volume.

One key driver of industry growth will be overall economic performance (which although not as robust as the past two years, is expected to continue nonetheless). The Internet and e-commerce are also expected to play major roles in future industry growth.

The effect of the Internet on the courier industry in Canada may be viewed from four primary perspectives:
- *Functionality:* Courier companies of all types and sizes have leveraged the capabilities of the Internet to improve existing business processes, customer service, etc. (e.g. online pickup scheduling, tracking, etc.)
- *New Services:* Many courier companies have introduced new services beyond the physical movement of goods as a result of the Internet (e.g. secure document delivery, etc.)
- *Competitive:* The Internet has facilitated the entrance of many Web-based competitors (e.g. nowdocs.com, etc.) and increased interest levels in small package shipping services among larger shipment configuration service providers such as LTL and trucking firms.
- *Industry Volume:* The Internet has and will continue to substantially affect industry shipping volumes, shipment characteristics, etc. For example, the growing use of e-mail, and recent decisions by many governments to accept electronically signed documents as legally binding, will reduce the need to send letters and documentation. Offsetting this however, is the increased number of "package" shipments that will be sent as a result of the growth in the "direct shipping" supply chain model e-commerce is largely based upon.

When looking at the effect of the Internet/e-commerce in terms of actual industry volume, the following conclusions have been drawn:
- Just over 12 per cent of all courier industry revenue in 2000 is generated from the fulfillment (delivery) component of Internet-based purchases ($57.1 million)
- 75 per cent of courier industry revenues associated with delivering Internet-based purchases of goods are derived from businesses
- Based on the predictions of several Internet-based think tanks, just over 50 per cent of total courier industry revenues will be derived from the Web in 2003 (as compared with 12 per cent estimated for 2000).

In addition to the Internet/e-commerce, a number of other industry trends will also continue to affect the Canadian courier industry including increasing competition from postal administrations; continued adoption of technology to reduce costs and increase customer service; a shift toward information as a service offering; continued mergers and acquisitions; and increasing challenges in attracting and retaining quality staff.

As this report indicates, the Canadian courier industry is a substantial, vibrant and growing component of the supply chain management strategies of many companies and contributes significantly to the success and well-being of the overall Canadian economy.

Source: Courier Industry Size, Structure And Fleet Analysis Study, Infobase Marketing Inc., January 2001.

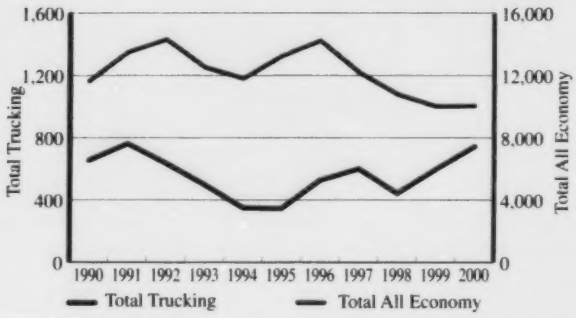
TABLE 11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1990 – 2000

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia and Territories	Total Trucking	Total Economy
1990	57	142	147	213	97	656	11,642
1991	98	107	191	223	143	762	13,496
1992	70	119	188	171	88	636	14,317
1993	70	91	152	130	56	499	12,527
1994	37	67	88	125	33	350	11,810
1995	31	81	58	141	34	345	13,258
1996	74	90	107	197	59	527	14,229
1997	82	119	164	178	58	601	12,200
1998	39	71	121	158	54	443	10,791
1999	46	104	143	249	56	598	10,026
2000	61	133	203	303	44	744	10,055

Note: Truck Transport industries include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

FIGURE 11-4: NUMBER OF BANKRUPTCIES, TRUCKING VERSUS TOTAL ECONOMY, 1990 – 2000



Note: "Truck Transport Industries" include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

BUS INDUSTRY

Because of the overlap among the various market segments, it is easier to present information on the bus industry in terms of the service lines provided, especially as all industry sectors report revenues in the same service line categories.

Canada's bus industry is made up of six main lines of business, the three main ones being intercity bus services, urban transit services and school bus services. Intercity bus passenger services are further divided into scheduled and charter services. Tour services are mainly sightseeing services over fixed routes and sell individual seats, while charter carriers rent the entire vehicle to a group. Shuttle carriers are primarily involved in providing service to airports and rail terminals.

With one significant exception, the Canadian scheduled bus industry is essentially oriented toward regional service. The exception to this regional orientation is the national network operated by the Laidlaw companies (Greyhound, Grey Goose, Voyageur Colonial, and several others), which provide international service, national service from Montreal and Southern Ontario to the Pacific Coast, and significant local/regional service in Ontario, Manitoba, Alberta and British Columbia.

Direct competition between bus carriers is currently limited to the Edmonton–Calgary–Fort McMurray corridor (Greyhound and Red Arrow) and routes in Southern Ontario, particularly around Toronto and on the Toronto–Niagara corridor (Greyhound, Trentway, PMCL, Ontario Northland).

Carriers in all sectors and of all sizes offer a mix of services. The largest Canadian carrier, Laidlaw Inc. of Burlington, Ontario, is primarily a school bus operator. Through its ownership of Greyhound, however, Laidlaw is also the largest scheduled carrier in both Canada and the United States. At the other end of the scale, most small school bus operators also provide some charter service. Among the charter carriers, Trentway-Wagar (Coach USA) is also a major scheduled operator in Ontario and Quebec. Virtually all scheduled carriers provide at least some charter service. These overlaps among the industry sectors make it difficult to describe the size of the scheduled and charter industry.

Table 11-7 summarizes revenues by source of revenue for the same year.

TABLE 11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1999

	Intercity bus operators	Charter bus operators	School bus operators	Urban transit operators	Total
Number of establishments[2]	**28**	**162**	**806**	**66**	**1,062**
Sources of revenues		(Millions of dollars)			
Scheduled intercity services	65.9	26.9	143.1	0.0	235.8
Charters, sightseeing and shuttle services	9.7	205.8	132.7	4.2	352.4
School bus transportation	2.4	18.7	893.8	0.4	915.3
Urban transit services	2.2	16.8	36.8	1,761.3	1,817.0
Other passenger/operating revenue	9.4	63.1	57.2	88.8	218.5
Parcels express	16.6	2.3	69.3	0.0	88.2
Total (excluding subsidies)	**106.2**	**333.5**	**1,332.8**	**1,854.7**	**3,627.2**
Subsidies[3]	0.3	0.1	2.1	2,559.8	2,562.2
Total	**106.5**	**333.6**	**1,334.9**	**4,414.5**	**6,189.5**

1 Consists of charter, shuttle and sightseeing operators.
2 Includes bus operators with annual revenues greater than $200,000.
3 Includes operating and capital subsidies for urban transit operators.

Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

MAJOR BUS EVENTS IN 2000

LEGISLATIVE AND REGULATORY CHANGES

Motor Vehicle Transport Act, 1987 Review

In March 1999, the federal Minister of Transport introduced amendments to the *Motor Vehicle Transport Act* (Bill C-77), which, among other things, proposed phasing in economic deregulation of the bus industry over a two-year period.

Following the tabling of Bill C-77, it became apparent that even a transitional approach to bus deregulation was not acceptable to some provinces and segments of the industry. On March 2, 2000, the Minister tabled revised amendments (Bill C-28). Following the November 2000 federal election, the proposed amendments were re-introduced in Parliament, in the Senate (Bill S-3), on January 31, 2001.

Industry Events – 2000

In 2000, FirstGroup PLC (London, United Kingdom) acquired the Hertz Group of Companies, headquartered in Regina. The 13 companies that make up the Hertz Group are primarily involved in school bus sales and service in Saskatchewan and the Northwest Territories.

Throughout 2000, Laidlaw's financial position attracted considerable interest. Although Laidlaw reported that its bus operations in Canada and the United States remained profitable, the company reported significant losses in both 1999 and 2000. Laidlaw remains in the process of corporate restructuring.

SERVICE LINES

As shown in Table 11-7, total revenues for the bus industry in 1999 amounted to $6.2 billion. Subsidies represented 41 per cent of the total or $2.6 billion. Excluding subsidies, main sources of bus revenue are urban transit operations totalling $1.8 billion or 50 per cent of total industry revenues, followed by school bus activities with 25 per cent of total revenues, charters, sightseeing and shuttle services (9.7 per cent), and scheduled intercity services (6.5 per cent).

The service line revenue breakdown shows better than any other indicator the cross-sectoral relationships in the industry. The school bus sector, for example, is not only far bigger than any of the others, but also the largest single provider of scheduled service, with $143 million in revenue.[6] Overall, the service line approach gives the best indication of the relative growth or decline of scheduled and charter services.

As Table 11-8 shows, the Canadian bus industry experienced a 13 per cent overall increase in revenues (excluding subsidies) between 1995 and 1999. Within different sectors, revenue reporting is subject to variations. These have been caused, in large part, by consolidated financial reporting resulting from mergers and acquisitions, as well as the new classification system used by Statistics Canada, i.e. the North American Industry Classification System (NAICS).[7]

TABLE 11-8: TOTAL REVENUES BY INDUSTRY SECTOR AND TYPE OF SERVICES, 1995 – 1999

	(Millions of dollars)					*Per cent change*
Type of Operators	*1995*	*1996*	*1997*	*1998*	*1999*	*1995 – 1999*
Scheduled intercity operators[1]	330.9	314.3	301.2	128.9	106.2	(67.9)
Charter, Sightseeing and shuttle	275.7	301.4	289.5	339.8	333.5	21.0
School bus operators	1,054.9	1,032.2	1,023.0	1,286.6	1,332.8	26.3
Urban Transit operators	1,545.3	1,621.4	1,712.3	1,743.8	1,854.7	20.0
Total (Excluding subsidies)	**3,206.8**	**3,269.3**	**3,326.0**	**3,499.1**	**3,627.2**	**13.1**
Subsidies	2,036.0	2,056.2	2,137.1	2,386.2	2,562.2	25.8
Total Revenues	**5,242.8**	**5,325.5**	**5,463.1**	**5,885.3**	**6,189.5**	**18.1**
Type of Services						
Scheduled Intercity services	245.8	247.9	241.3	240.1	235.8	(4.0)
Charters, sightseeing and shuttle services	317.9	334.2	316.4	368.7	352.4	10.8
School bus services	864.5	832.2	825.7	893.5	915.3	5.9
Urban Transit services	1,483.8	1,574.1	1,672.2	1,694.0	1,817.0	22.5
Other passenger/operating revenues	216.2	196.3	191.2	216.2	218.5	1.1
Parcels Express delivery	78.6	84.6	79.4	86.6	88.2	12.2
Total (Excluding subsidies)	**3,206.8**	**3,269.3**	**3,326.0**	**3,499.1**	**3,627.2**	**13.1**
Subsidies	2,036.0	2,056.2	2,137.1	2,386.2	2,562.2	25.8
Total Revenues	**5,242.8**	**5,325.5**	**5,463.1**	**5,885.3**	**6,189.5**	**18.1**

1 Starting in 1998, some scheduled intercity carriers have been recorded under school bus operators due to consolidated financial reporting coming from mergers and acquisitions

Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215, Special tabulations

6 In 1998-99, the high proportion of scheduled intercity revenues recorded under school bus operators is due to consolidated financial reporting coming from mergers and acquisitions, as some intercity carriers activities have been reported under carriers involved primarily in school bus operations.

7 Following the 1995 North American Free Trade Agreement, Canada, the USA and Mexico developed the North American Industry Classification System (NAICS) to replace the Standard Industrial Classification (SIC) system. The bus industries covered under NAICS include urban transit systems; interurban and rural bus transportation; school bus transportation; charter bus industry; shuttle services; and scenic and sightseeing transportation by bus.

MARINE TRANSPORTATION INDUSTRY

A fleet of Canadian flag operators providing domestic and transborder shipping services make up Canada's marine industry, while foreign flag operators calling at Canada's major ports largely serve international trade. Recent years have seen major policy reforms in the marine sector, and the year 2000 was no exception. A number of important events took place and progress on some significant legislative changes occurred.

MAJOR MARINE EVENTS IN 2000[8]

LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

Marine Liability Act (MLA)

The introduction of the *Marine Liability Act* (MLA) is an important step toward modernizing marine liability legislation in Canada. The principal objective of the Act is to introduce, for the first time, legislation aimed at establishing liability for passengers in the marine mode. At the same time, the legislation introduces new rules for apportioning liability in maritime cases and consolidates all existing marine liability regimes into the Act.

The Senate passed the MLA, introduced as Bill S-17, on May 17, 2000. It moved successfully through the House of Commons, receiving second reading on October 6, 2000, and referral to the Standing Committee on Transport shortly before Parliament was dissolved. The proposed MLA was re-introduced and passed by the Senate on January 31, 2001, as Bill S-2. It was referred to the House of Commons where it received its Second Reading on February 23, 2001. The Bill was referred to the Standing Committee on Transport and Government Operations (SCOTGO).

Amendments to the *Shipping Conferences Exemption Act, 1987* (SCEA)

Following a review of the *Shipping Conferences Exemption Act* (SCEA), begun by Transport Canada in 1999, and including extensive consultations, Bill C-14 was introduced in Parliament on March 1, 2001. The Bill contains amendments to SCEA that relate to shipping and navigation. Transport Canada remains committed to ensuring that its shipping conference legislation is kept in balance with that of Canada's major trading partners, in particular the United States. The amendments promote a competitive operating environment in conferences and also support Canada's international trade. The Act attempts to ensure that Canadian shippers have access to a reliable level of service from international ocean shipping lines at reasonable cost.

Canada Shipping Act, 2001 (Bill C-14)

The *Canada Shipping Act* (CSA) is the principal legislation governing the operation of Canadian vessels, as well as the operation of foreign vessels in waters under Canada's jurisdiction. It is one of the oldest pieces of legislation still in effect in Canada. A complete rewrite of the CSA was undertaken and was introduced in the House of Commons on June 8, 2000, as the *Canada Shipping Act, 2000* (Bill C-35). This legislation modernizes all aspects of the current CSA. The legislation introduces a new enforcement scheme that seeks to encourage and promote compliance by means of administrative penalties, thus, reserving the court system for only the most serious offences.

Bill C-35 died on the order paper when Parliament was dissolved. It was re-introduced in the House of Commons on March 1, 2001, as the *Canada Shipping Act, 2001* (Bill C-14), which received second reading on March 16, 2001, and was then referred to the Standing Committee on Transport and Government Operations (SCOTGO).

TRANSPORTATION AND INTERNATIONAL INITIATIVES

Organisation for Economic Co-operation and Development (OECD) — Maritime Transport Committee

Through the Maritime Transport Committee, the Organisation for Economic Co-operation and Development (OECD) continued work on various maritime issues. Of particular interest was a workshop on Regulatory Reform in International Maritime Transport that focused on liner shipping conferences and questions concerning the application of antitrust laws.

More than 100 participants representing maritime and competition administrators, shipowners, shippers and freight forwarders attended. They openly expressed their views on such issues as removal of immunity from antitrust laws, setting common conference tariffs, discussion and capacity agreements, and recent reviews of domestic conference legislation in OECD countries.

Shippers strongly endorsed lifting antitrust immunity for conferences, while shipowners and a number of OECD countries argued that the current system is working well

8 Some initiatives started in 2000, or before, that entered formally the legislative process in 2001 are also presented in this sub-section.

***SHIPPING CONFERENCES EXEMPTION ACT, 1987* (SCEA)**

A shipping conference is an association of liner companies operating under an agreement to provide service on common routes based upon agreed rates and terms of service. The *Shipping Conferences Exemption Act*, 1987 (SCEA) exempts certain shipping conference practices from the provisions of the *Competition Act*. Under SCEA, for example, shipping conferences can set ocean freight rates and services together, provided they publish their rates in a tariff filed with the Canadian Transportation Agency (CTA) and file their conference agreement in a similar manner. Canada's major trading partners also maintain similar exemptions from competition legislation for shipping conferences.

The Act also incorporates provisions for confidential "service contracts" that may be subject to conference rules and "independent action" by individual conference members. These provisions are in place to promote intra-conference competition and provide shippers with additional options, including pricing options.

In addition, the Act provides for the Minister of Transport to designate a shippers' group to represent shippers' interests. The Canadian Shippers' Council (CSC) is one example. Under the Act, conferences are required to meet with the designated shippers' group when requested and provide information to conduct the meeting satisfactorily. Customarily, the Canadian Shippers' Council meets with tariff filing conferences to discuss the conferences' proposed business plans, as well as their rates, surcharges and ancillary charges.

and is necessary to ensure the availability of services to shippers.

The workshop resulted in the recommendation that the Maritime Transport Committee continue to investigate antitrust immunity, common pricing behaviour, and the impact of various types of operating agreements between carriers.

Industry Events

International

- Concentration is increasing in international liner shipping. The top 20 companies now control 76 per cent of the world's cellular fleet, up from just over 50 per cent in 1995.
- The financial recovery enjoyed by the liner shipping industry during 1999 continued through 2000.
- Two established shipping lines added direct calls at Halifax to their transatlantic services during 2000 — Costa Container Line and Mediterranean Shipping Company.
- Vancouver also has new services calling: China Shipping Container Line introduced a service to the Far East in July 2000 and Compania Sud Americana De Vapores (CSAV) started a new service operating from the Far East to Vancouver and then outbound to Central and South America.
- Two independent operators — Norasia Lines and BOLT Canada Line — withdrew their services to Montreal early in 2000.
- CP Ships continued on its expansion path, acquiring TMM Lines shareholding in Americana Ships in January 2000 and then Christensen Canadian African Line in April 2000.
- CP Ships is also undertaking a major fleet retonnaging program, including both new building orders and the acquisition of used vessels. CPR Ships currently ranks as the 11th largest container operator in the world, based on its fleet capacity, according to *Containerization International*.
- Kent Line (Irving Group) has entered into a vessel sharing agreement with Seaboard Marine for a service that will call in Miami and the Caribbean.
- Matson Navigation announced that it was dropping its West Coast marine feeder service, connecting the Pacific Northwest and California, in favour of intermodal rail service late in 2000.

Domestic

- Algoma Central Corporation and Upper Lakes Group Inc. announced the pooling of their straight deck bulker and self-unloader fleets into a single new entity, Seaway Marine Transport, early in 2000.
- CSL Group purchased the 50 per cent stake in Marbulk Canada Inc. belonging to Upper Lakes Group to become partners with Algoma Central Corporation.
- Rotterdam-based Smit International acquired Rivtow Marine Ltd., the second-ranked tugboat company in British Columbia.
- The year 2000 marks the last year that the Canadian Coast Guard will administer the Eastern Arctic Sealift, a responsibility to be assumed in future years by the Government of Nunavut.

Marine Freight Transport Services

Domestic Services

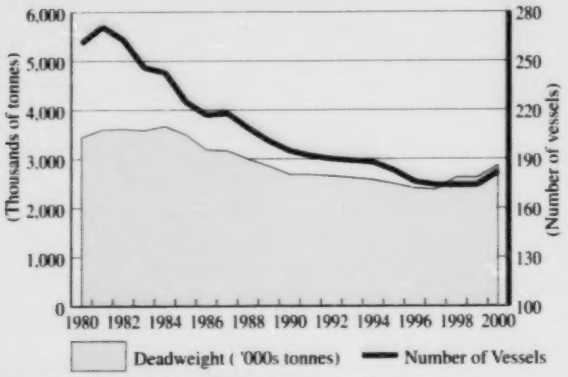
From 1980 to 1997, the Canadian merchant fleet, defined here as self-propelled Canadian-flagged vessels of 1,000 gross tonnes and over, lost on average one per cent of its carrying capacity each year, declining from 3.4 million to 2.3 million deadweight tonnes. Carrying

capacity (deadweight) started a recovery process in 1998 to reaching nearly 2.9 million tonnes by the end of 2000.

The number of ships followed a similar trend, falling from 261 to 174 vessels over the 1980–1997 period, before rising to 182 ships in 2000. Figure 11-5 illustrates the evolution of the Canadian registered fleet from 1980 to 2000.

FIGURE 11-5: CANADIAN REGISTERED FLEET, 1980 – 2000

(Ships of 1,000 gross tons and over)



Notes: Deadweight tonnage of vessel carrying capacity in metric tonnes.
Fleet includes self-propelled vessels of 1,000 gross tons and over.

Source: Canadian Transportation Agency and Transport Canada

From 1980 to 2000, dry bulk carriers remained the backbone of the Canadian merchant fleet, although this segment's share of total deadweight tonnage dropped from 81 to 69 per cent over the period. The total fleet of dry bulk carriers fell from 129 to 72 vessels, on the other hand, tankers' share rose from 10 to 21 per cent of total deadweight tonnage, although their number declined from 39 to 22 vessels.

Table 11-9 shows the transport capacity of the Canadian registered fleet, by type of vessel.

TABLE 11-9: CANADIAN REGISTERED FLEET BY TYPE, 1980 – 2000

	Deadweight ('000s tonnes)			*Number of Vessels*		
Type of Carriers	*1980*	*1990*	*2000*	*1980*	*1990*	*2000*
Dry Bulk	2,789	2,099	1,966	129	80	72
Tankers	360	384	613	39	34	22
General cargo	151	99	183	28	17	24
Ferries	72	68	66	54	54	56
Other	73	39	35	11	10	8
Total	**3,444**	**2,687**	**2,864**	**261**	**195**	**182**

Note: Fleet includes self-propelled vessels of 1,000 gross tonnes and over.

Source: Canadian Transportation Agency and Transport Canada

Eastern Canada

In January 2000, Algoma Central Corporation and Upper Lakes Group Inc. announced the merger of their pooled fleets, Seaway Self Unloaders and Seaway Bulk Carriers into a new entity, Seaway Marine Transport. Algoma Central and Upper Lakes will continue to independently own and operate the 43 vessels dedicated to the pool.

The merger of Algoma and Upper Lakes Group's entire dry bulk fleets continues a pattern of fleet consolidation that started in 1990 with the pooling of the firms' bulker fleets into Seaway Bulk Carriers. The driving force then came from the dwindling of the eastbound movement of export grain — the primary cargo for Great Lakes bulkers — thus pressuring the Canadian bulker fleets to reduce costs wherever possible. In 1991, Canada Steamship Lines, Misener Holdings Ltd. and James Richardson & Sons Ltd. followed suit and pooled their 16 bulkers to create Great Lakes Bulk Carriers (GLBC). In 1994, Algoma and Upper Lakes Group swallowed up GLBC and also extended their partnership to the self-unloader side by forming Seaway Self Unloaders. The two partners hope to achieve further increases in efficiency by integrating both bulkers and self-unloaders.

On the international side of their operations, the companies also participate in pooling arrangements. In January 2000, Canada Steamship Lines Inc. (CSL) purchased the 50 per cent stake in Marbulk Canada Inc. belonging to Upper Lakes Group, becoming partners with Algoma Central Corporation. Marbulk operates a fleet of eight self-unloading bulk carriers in international trades. The Marbulk commercial operation has since been integrated into CSL International Inc., a subsidiary of CSL, which also operates a fleet of self-unloading bulk carriers in international trades.

Table 11-10 provides information on vessel type, gross registered tonnage (GRT), area of operation, and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT and over in eastern Canada. Algoma Central Corporation, Upper Lakes Group, and Canada Steamship Lines are the three largest operators in the area. Algoma Central Corporation, with 28 per cent of eastern Canada's fleet capacity, is the largest inland shipping company in Canada.

Western Canada

A large fleet of tugs and barges provides domestic marine cargo services on the West Coast. (Unfortunately, there is no fleet list available by company providing GRT for their tugs and barges.) Most of the operators concentrate on domestic trade, but some trade

TABLE 11-10: EAST COAST CANADIAN-FLAG CARGO FLEET — 1,000 GRT AND OVER, 2000

Companies	*Type*	*Number of vessels*	*GRT*	*Area of Operation*	*Type of Service*
Algoma Central Corp.	Bulker	9		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk, liquid bulk
	Self-Unloader	15		Great Lakes/St. Lawrence/East Coast Canada	
	Tanker	6		Great Lakes/Gulf of St. Lawrence/	Dry bulk
	Total	30	502,970	East Coast Canada	
Black Creek Shipping Co. (See Lower Lakes also)	Self-Unloader	1	10,532	Great Lakes/St. Lawrence	
Canada Steamship Lines	Bulker	1		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk
	Self-Unloader	11		Great Lakes/St. Lawrence/East Coast Canada	
	Total	12	273,235		
Canarctic Shipping	Bulker	1	20,236	Canadian Arctic from May to November	Dry/Liquid bulk
Canship Ltd.	Other	1	1,714	East Coast	
C.A. Crosbie Shipping	Other	2	5,301	Canadian Arctic/East Coast Canada/Atlantic Basin	Container, breakbulk, Ro-Ro
ESSROC Canada	Other	1	6,792	Great Lakes	Cement
Groupe Desgagnés	Tanker	3		Great Lakes/St. Lawrence/	Container/breakbulk/
	Other	6		Arctic/Overseas	dry bulk/grain
	Total	9	61,210		
Imperial Oil	Tanker	1	1,192	Great Lakes	Liquid bulk
Irving/Kent Line	Tanker	3	51,091	Maritimes	Liquid bulk
LaFarge Canada	Other	1	6,729	Great Lakes	Cement
Lower Lakes Towing	Self-Unloader	1	12,557	Great Lakes/St. Lawrence	Dry bulk
McKeil Work Boats Ltd.	Other	2	8,082		
Mobil Oil, Chevron, Murphy Oil Corp. Partnership	Tanker	1	76,216	Maritimes	Liquid bulk
Oceanex Inc.	Other	3	41,157	St. Lawrence/East Coast Canada	Container, trailer, Ro-Ro, breakbulk
Parrish & Heimbecker Ltd. (P & H Shipping)	Bulker	2	32,570	Great Lakes/St. Lawrence	Dry bulk, grain
N.M. Paterson & Sons	Bulker	7	113,814	Great Lakes/St. Lawrence	Dry bulk, grain
Penney Ugland Inc.	Tanker	1	76,216	Maritimes	Liquid bulk
Pierre Gagne Contracting	Self-Unloader	1	20,148	Great Lakes/St. Lawrence	Dry bulk
Provmar Fuels Inc.	Tanker	2	5,949		Liquid bulk
Purvis Marine	Other	1	3,280		
Rigel Shipping Canada Inc.	Tanker	3	18,786	St. Lawrence	Liquid bulk
Shell Canada	Tanker	1	2,758	St. Lawrence	Liquid bulk
Transport Nanuk	Other	3	23,463	Arctic ports/St. Lawrence/International	Heavy lift, Ro-Ro, general, Lo-Lo
Upper Lakes Group	Bulker	13		Great Lakes/St. Lawrence	Dry bulk, grain
	Self-Unloader	8			
	Total	21	390,556		
Grand Total		**111**	**1,766,554**		

Source: Lloyd's Register of Ships and Transport Canada data

internationally between Canadian and US ports. There is also a significant fleet of ferry vessels providing links to coastal and island communities.

Montana businessman Dennis Washington owns three of the top tug and barge companies — Seaspan International Ltd., Cates Tugs, and Kingcome Navigation Company (formerly owned by MacMillan Bloedel). Seaspan International Ltd. is the largest Canadian tug and barge operator on the West Coast. Seaspan's main areas of business include tug and barge transportation, log barging and ship docking.

The second-ranked tugboat company in British Columbia, Rivtow Marine Ltd., was acquired during 2000 by a Canadian subsidiary of Rotterdam-based Smit International. The acquisition included Rivtow's wholly owned subsidiary Tiger Tugz Inc. and its interest in Westminster Tug Boats.

Northern Canada

Headquartered in Hay River, Northern Transportation Company Limited (NTCL) is the principal marine operator in the area of Northern Canada that encompasses the Mackenzie River Watershed and the Arctic coast and islands. Its operations cover the Mackenzie River, the western Arctic, Alaska and Great Slave Lake. Operating on the Mackenzie River since 1934, NTCL handles bulk petroleum products and dry cargo for communities, defence installations and gas exploration sites across the North.

Northern Transportation Company Limited has also provided tug and barge operations since 1975 from the Port of Churchill to service communities in what is now the Kivalliq region of Nunavut. In 1987, the company established an eastern Arctic Sealift marshalling and packaging service out of Montreal, operated through its subsidiary, NorTran Inc. In 1996, NTCL expanded its eastern Arctic operations when the company secured a contract to resupply fuel to Baffin communities, using chartered ice-strengthened tankers.

Lloyd's List of Shipowners, Managers, and Managing Agents, 1999-2000 records NTCL as the owner of 87 vessels, including 71 barges (mainly tank barges that carry dry cargo on their decks) and 16 tugs, with a total of 71,449 GRT (Lloyd's does not include vessels under 100 GRT). NTCL's tugs were constructed between 1943 and 1973, and its barges date from 1969 to 1975.

NTCL is a member of the NorTerra group of companies. NorTerra Inc. is a 100-per cent Aboriginally owned holding company. It is managed and owned equally by Inuvialuit Development Corporation, representing the Inuvialuit of the western Arctic, and Nunasi Corporation, representing the Inuit of Nunavut.

A. Frame Contracting Ltd. and Cooper Barging Service Ltd. are other long-term operators in the western Arctic. A. Frame Contracting operates a tug and several barges, providing seasonal barge services to communities on Lake Athabasca. Cooper Barging Service operates a fleet of three tugs and six barges, providing resupply services on the Mackenzie and Liard Rivers from its base at Fort Simpson.

For over 40 years, the Canadian Coast Guard has been co-ordinating the movement of goods in the eastern Arctic. The Coast Guard Arctic Sealift divides the eastern Arctic communities into five zones, combining smaller communities with larger centres in the same zone. This allows all communities to share in a lower average shipping rate through economies of scale, with the same rate applying regardless of the size of the shipment.

Operated on a cost-recovery basis, the service co-ordinates the delivery of cargoes for federal departments, the territorial government, the United States Air Force, municipalities, and private businesses and citizens. Coast Guard personnel lease space on ships, act as booking agents, negotiate the lowest freight rates with the carriers, and monitor the movement of the cargo until it is discharged at its destination. Working under contract with the Coast Guard, commercial cargo vessels and tankers transport dry cargo from its main marshalling base in Montreal and bulk fuel from northern distribution points to communities in the eastern Arctic (Nunavut) during the ice-free summer period. The Sealift Program serves 26 communities in the areas of Foxe Basin, the High Arctic, and the South and East Baffin. In 1999, a total of 11,045 tonnes of cargo were delivered to all of the communities.

The year 2000 was the last year that the Canadian Coast Guard administered the Arctic Sealift. In September 2000, the Minister of Fisheries and Oceans announced that the Government of Canada is transferring responsibility for the Arctic Sealift operations to the Government of Nunavut, effective at the end of the 2000 shipping season.

In addition to the Arctic Sealift to the Baffin Region of Nunavut and the Northern Transportation Company Limited service to the Kivalliq Region out of Churchill, the Quebec Ministry of Transportation manages resupply services to the Nunavik Region, while Moosenee Transport Ltd. handles cargo originating in Toronto and bound for the James and Hudson Bay Cree out of Moosenee.

Carriers active in the eastern Arctic resupply include Northern Transportation Company Limited, Transport Desgagnés, C.A. Crosbie Shipping Ltd., Transport Nanuk Inc., McKeil Work Boats Ltd., and Moosenee Transport Ltd., a tug and barge operator servicing James Bay and the lower part of Hudson Bay.

In addition to community resupply, mines such as Polaris and Nanisivik have vessels calling with supplies inbound and carrying zinc and lead concentrates to world markets outbound. Fednav, the owner of the *MV Arctic*, is active in this market.

International Services

International marine freight transport consists mainly of liner and bulk shipping.

Bulk Shipping

In general, bulk shipping refers to the sector of the marine freight industry that carries single cargoes in large volume ships. Canadian shippers of bulk commodities — including grain, coal, iron ore and potash — rely on bulk shipping operators to move their cargo.

The open global market sets bulk freight rates. In general, the market is highly competitive and made up of time charters (term contracts) and the "spot" market. The terms of charter contracts typically range from one to five years, depending on the volatility of prices. During periods of greater predictability in transportation rates, longer contracts are common, while shorter contracts usually prevail when prices are unstable. These types of marine service arrangements move the majority of Canada's exports and imports.

Short-term contracts covering a specific number of voyages, days or given quantity of cargo make up the "spot" or "tramp" market, with prices set in open markets and exchanges. Prices depend on supply and demand factors such as vessel size, equipment, trade route and timeliness of the service requirement.

Liner Shipping

In general, liner carriers handle higher-value containerized cargoes, such as electronics, manufactured goods or frozen produce. Liner services are offered according to published schedules and on specific trade routes with fixed itineraries.

Controlled to a large degree by Pacific Rim and western European interests, the international liner trade is dominated by large fleets of specialized container vessels operating on major trade routes around the world. Canadian Pacific subsidiary CP Ships controls a significant fleet that ranks 11th in the world, based on vessel capacity and number of ships.[9] Much of CP Ships' fleet has been amassed through the acquisition of foreign shipping lines over the past few years. The vast majority of vessels in the Canadian-controlled international fleet operate under foreign flags and employ foreign officers and crew.

Shipping lines calling at Canadian ports may choose to provide conference or non-conference liner services. Ocean carriers providing liner services on a common trade route often elect to form a shipping conference and collectively agree on rates and/or conditions of service. Under the *Shipping Conferences Exemption Act (SCEA)*, a group of lines are entitled to operate under a conference agreement that exempts certain practices of the conferences from the provisions of the *Competition Act*. The Canadian Transportation Agency is responsible for administering the SCEA.

"Independent" shipping lines or non-conference carriers are those that choose not to participate in conferences. They generally offer rates and services that are comparable with conference operators and contribute to a competitive international shipping industry. In recent years, the tonnage carried by non-conference carriers has been increasing compared with the tonnage carried by conference operators visiting Canadian ports.

Services Available to Canadian Shippers

In 2000, the Canadian Transportation Agency had 15 shipping conference agreements on file. Thirteen of these conferences filed tariffs with the Agency, the same number as in 1999. Most operate from eastern Canada to northern Europe and the Mediterranean. Among the major lines serving Canada as conference members are Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd, Mitsui O.S.K. Lines and Orient Overseas Container Line.

Table 11-11 lists the 12 tariff-filing conferences serving Canada in 2000. Eleven serve the East Coast, and seven serve the West Coast. The Japan-East Canada Freight Conference and the Japan-West Canada Freight Conference, which appeared on the list for 1999, have now been dissolved, further reducing the number of active conferences.

TABLE 11-11: SHIPPING CONFERENCES SERVING CANADA IN 2000

Australia/Canada Container Line Association (E & W)
Canada/Australia – New Zealand Association of Carriers (E & W)
Canada/Australia–New Zealand Discussion Agreement (E & W)
Canada Transpacific Stabilization Agreement (E & W)
Canada–United Kingdom Freight Conference (E)
Canada Westbound Transpacific Stabilization Agreement (E & W)
Canadian Continental Eastbound Freight Conference (E)
Canadian North Atlantic Westbound Freight Conference (E)
Continental Canadian Westbound Freight Conference (E)
Mediterranean Canadian Freight Conference (E)
Mediterranean North Pacific Coast Freight Conference (W)
New Zealand/Canada Container Lines Association Conference (E & W)

Notes: E = East Coast; W = West Coast.
Tariff-filing conferences only.

Source: Canadian Transportation Agency

Shippers benefit from competition within conferences through the independent action provisions contained in

9 Containerisation International; "Packing a Punch — The World's Top 20 Liner Operators," November 2000, page 54-59.

CANADA SHIPPING ACT

The *Canada Shipping Act* requires that Canadian passenger vessels carrying 12 or more passengers and of 15 gross tonnes or over (formerly five gross tonnes) are required to undergo annual safety inspections by Transport Canada's Marine Safety Branch. Smaller vessels now undergo inspections before the vessel is first put into service and are subject to spot checks in later years.

the *Shipping Conferences Exemption Act*, as well as between conference and non-conference carriers. The competition provisions permit individual conference lines to offer rates or services different from those published as part of the conference tariff. In addition, shipping conference rates paid by shippers can be negotiated through "service contracts" between a conference and a shipper. To comply with the Act, service contracts must be filed with the Canadian Transportation Agency.

For the year 2000, the Agency accepted filings for 94 service contracts from seven conferences, one less than the 95 filed in 1999. The contracts applied to both inbound and outbound traffic and to origins/destinations on both the east and west coasts of Canada. The majority, however, applied to the East Coast. The average duration of the contracts was for one year.

Marine Passenger Transport Services

Ferry Services

Canada's ferry services vary widely in terms of ownership (from small private operators to provincial governments and federal Crown corporations), vessel types (small cable ferries to large cruise-type vessels and fast ferries) and operations (seasonal to year-round schedules). Ferry companies, municipalities, provincial and federal governments, and private companies also variously own, lease and operate terminal and docking facilities. All major ferry operators in Canada belong to the Canadian Ferry Operators Association (CFOA).

Federal Subsidies to Ferry Operations

In 1995, the National Marine Policy outlined the federal government's goal to make the marine sector more commercially oriented and reduce its involvement in the direct delivery of transportation services. This move was intended to allow the private sector to provide some of these services.

In 1997, Marine Atlantic Inc., a federal Crown corporation, commercialized several of its routes and had its subsidies reduced to approximately $32 million in 2000/01 from a peak of $122 million in 1993. The corporation will continue to provide constitutionally guaranteed ferry services between Nova Scotia and Newfoundland.

Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic Inc. and by three private-sector operators: Northumberland Ferries Ltd., Bay Ferries Ltd. and C.T.M.A. Traversier Ltée.

As a further example of improved efficiencies and how the National Marine Policy is being successfully implemented in the ferry program, the agreement with Bay Ferries Ltd. has been structured to phase out both operating and capital subsidies by 2000/01. Beginning in 2001, the company will continue to operate as an independent commercial ferry service.

Service to Canadians remains critical in the management of ferry operations. In light of increased demand and anticipated traffic growth between Newfoundland and Nova Scotia, Marine Atlantic Inc. has procured a fourth vessel, the *MV Stena Challenger*, to address fleet capacity requirements. This new vessel will enter into service for the 2001 summer season.

Cruise Ship Industry

The large cruise vessels calling at Canada's ports are owned by foreign-based companies and fly foreign flags. The extended cruises offered by these vessels fall into two basic categories — the luxury cruise and the pocket cruise, distinguished by vessel capacity of more or less than 150 passengers.

Optimism for the continued growth of the international cruise sector continued high in all regions of Canada, where ports are continuing to invest in new infrastructure to serve this growing market. The Vancouver Port Authority has begun construction of a third cruise berth at Canada Place to be ready in time for the 2003 cruise season, at a cost of $79 million. Also on the West Coast, Prince Rupert is refurbishing its small ship cruise facility in anticipation of 25 pocket cruise ship calls in 2001. They are also looking at the possibility of developing a docking facility for large cruise vessels.

On the East Coast, Halifax opened its Cruise Pavilion in September 1999 and continues to invest in improvements to its facilities. The Canadian government has announced that it is funding the expansion of the cruise ship terminal at Pointe-à-Carcy, in Quebec City's Old Port, with work to be completed in time for the 2001 season.

OVERVIEW OF MAJOR FERRY SERVICES

Marine Atlantic Inc. (MAI)
Marine Atlantic Inc. is the federal Crown corporation that operates the constitutionally guaranteed year-round ferry link between North Sydney, Nova Scotia, and Port aux Basques, Newfoundland, and the seasonal alternative between North Sydney, Nova Scotia, and Argentia, Newfoundland.

Coastal Transport Ltd.
Under contract with the Province of New Brunswick, Coastal Transport Ltd. operates year-round passenger/vehicle ferry service to the islands of Grand Manan and White Head, New Brunswick. The ferry to Grand Manan leaves daily from Black's Harbour, New Brunswick, while the White Head Island ferry departs several times a day from Grand Manan at Ingalls Head.

Woodward Group
Under contract with the Province of Newfoundland, the Woodward Group operates a single passenger/vehicle ferry service from May to January between Blanc Sablon, Quebec, and St. Barbe, Newfoundland.

Northumberland Ferries Limited (NFL)
Under contract with the federal government, NFL provides seasonal passenger/vehicle ferry transportation from May 1 to December 20 between Caribou, Nova Scotia, and Wood Islands, Prince Edward Island.

Bay Ferries Limited
Under contract with the federal government, Bay Ferries Limited provides year-round passenger and vehicle ferry service between Saint John, New Brunswick, and Digby, Nova Scotia, and seasonal service from June 1 to mid-October between Yarmouth, Nova Scotia, and Bar Harbor, Maine.

C.T.M.A. Traversier Ltée
C.T.M.A. Traversier Ltée provides federally subsidized passenger/vehicle ferry service between Cap-aux-Meules, Magdalen Islands, Quebec, and Souris, Prince Edward Island, during the ice-free period from early April until late January. Under contract with the Province of Quebec, C.T.M.A. also provides a passenger/cargo ferry service from Cap-aux-Meules to Montreal from April to December, and from Cap-aux-Meules to Matane during the winter.

Newfoundland and Labrador's Department of Works, Services and Transportation
Newfoundland and Labrador's Department of Works, Services and Transportation provides all the intraprovincial and coastal ferry services under contract with private operators. The department also has responsibility for the Labrador Coastal Service, which was formerly provided by Marine Atlantic Inc.

La Société des traversiers du Québec (STQ)
Subsidized by the Quebec transportation ministry, STQ operates five year-round passenger/vehicle ferry services across the St. Lawrence River within the Province of Quebec. STQ also has responsibility for three other provincially subsidized ferry services, which are operated by private companies. These routes include Rivière-du-Loup to Saint-Siméon (operated by CFOA member La Traverse Rivière-du-Loup/Saint-Siméon Ltée), Montmagny to Île-aux-Grues, and Cap-aux-Meules to Île-d'Entrée.

Quebec Ministry of Transportation
The Quebec Ministry of Transportation subsidizes a private operator servicing Isle Verte and a water taxi service in St. Augustin. The ministry is also responsible for the adjudication of contracts for transporting supplies to native communities in Northern Quebec.

Ontario Ministry of Transportation
The Ontario Ministry of Transportation provides financial support to four year-round ferry operations in eastern Ontario. The Province of Ontario operates the Glenora and the Wolfe Island to Kingston ferries, while the respective township authorities operate ferry services to Amherst and Howe islands.

Owen Sound Transportation Company (OSTC)
Owen Sound Transportation Company (OSTC) provides seasonal passenger/vehicle ferry services on Lake Huron between Tobermory, Ontario, and South Baymouth, on Manitoulin Island, from early May until mid-October. OSTC also manages transportation services on Lake Erie between Leamington/Kingsville and Pelee Island, Ontario, and Sandusky, Ohio, from April through December on behalf of the Ontario Ministry of Transportation.

Manitoba Department of Highways and Transportation
The Manitoba Department of Highways and Transportation operates seven passenger/vehicle ferries, three motor vessels, and four cable ferries that provide services on lakes and across rivers in the province, including river ferries to Norway House, Matheson Island and Cross Lake.

British Columbia Ferry Corporation (BC Ferries)
BC Ferries is a provincial Crown corporation with a fleet of 40 vessels on 26 routes, serving 43 marine terminals, as well as seven other sites. The British Columbia government receives a federal grant for the provision of ferry services in coastal waters. BC Ferries is the largest ferry operation in North America.

British Columbia's Ministry of Transportation and Highways
British Columbia's Ministry of Transportation and Highways operates and maintains British Columbia's inland ferry service and contracts with a private operator for the provision of a tug and barge ferry service. The ministry also subsidizes a private ferry service on one of the province's interior lakes.

Alaska cruises through British Columbia's scenic Inside Passage are the third most popular cruise in the world, after the Caribbean and the Mediterranean. Most luxury cruise vessels sailing to Alaska use the Port of Vancouver as their home port (where passengers embark and/or disembark) because the *US Passenger Vessel Act* prohibits foreign-flag vessels from carrying passengers between US ports. Trips between Vancouver and Alaska also fit conveniently into a seven-day time frame. Seattle has recently opened a new cruise facility and has attracted calls by the Norwegian Cruise Line during 2000. Ships calling in Seattle and travelling to Alaska include a call at Vancouver/Victoria in their itinerary in order to comply with the *US Passenger Vessel Act*. Three-to-four-day pocket cruises were also operated out of Seattle in 2000 with calls in Vancouver and Victoria and proved popular.

In eastern Canada, luxury cruise ships regularly sail out of New York and up the eastern seaboard with calls at Halifax, Charlottetown and other East Coast ports before entering the St. Lawrence River, where they call at Quebec City and Montreal. Shorter cruises out of New York or Boston travel northward to Halifax, Saint John and other Atlantic ports. The cruising season used to be concentrated in the fall colour season but now extends over several months, beginning as early as May or June. The world's major cruise lines — including Carnival, Royal Caribbean, Cunard, Princess, Holland America, and others — all call at eastern Canadian ports. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City and Kingston or Rochester, or even travel by canal through New York State up to Lake Ontario and then into the St. Lawrence River. Vessels travelling into or out of the Great Lakes on repositioning voyages also call at Quebec and Atlantic ports en route.

On the Great Lakes, Hapag Lloyd's luxury vessel, *Columbus*, with accommodation for 420 passengers, continued to offer its popular cruises during 2000. The French yacht, *Le Levant*, carrying 90 passengers, also called again in 2000. Other pocket cruise vessels are also operating. Windsor has been chosen as the home port for the 225-passenger *Arcadia*, beginning calls in 2001. Seventeen US and Canadian Great Lakes ports (including Chicago, Toronto and Thunder Bay) joined together in 1999 to found the Great Lakes Cruising Coalition to market the area.

Local Canadian operators also offer a multitude of lock, harbour and river cruises, as well as excursions for such activities as whale watching.

AIR TRANSPORTATION INDUSTRY

Major Events In 2000

Industry Restructuring

The year 2000 saw the first major changes in Canada's air transportation industry in over 10 years. In January, following the government's approval of Air Canada's acquisition of Canadian Airlines International Ltd. on December 21, 1999, the two carriers started co-operating on those routes where they historically offered competing services. In April, the services of the two airlines were combined. In July, Canadian Airlines became a wholly owned subsidiary of Air Canada. Air Canada's October schedule fully integrated the operations of the two airlines and all their regional affiliates and commercial partners. Air Canada can now be ranked as the 12th largest airline in the world and 7th largest in North America.

Although the corporate restructuring was completed within 2000, the federal government recognized that 18 to 24 months would be needed for the two carriers to complete consolidation and for other Canadian competitors to increase their presence in the domestic marketplace.

The Acquisition of Canadian Airlines by Air Canada

On January 4, 2000, 853350 Alberta Ltd., a corporation owned in part but fully financed by Air Canada, acquired approximately 82 per cent of the common and non-voting common shares of Canadian Airlines Corporation. The numbered Alberta company subsequently acquired all of the preferred shares of Canadian Airlines Corporation.

The numbered Alberta company was used by Air Canada to mitigate any possible liability to the Air Canada shareholders that could have arisen as a result of the severe financial distress of Canadian Airlines. During the first six months of the year, Canadian Airlines continued as a separate legal entity, but operational integration within Air Canada was gradually increased. On June 27, 2000, the Alberta Court of Queen's Bench approved the Canadian Airlines Corporation's Plan of Compromise and Arrangement under the *Companies' Creditors Arrangement Act*, permitting it to restructure its debts. Subsequently, on July 5, 2000, Air Canada acquired the remaining interest in 853350 Alberta Ltd. that it did not already own, making Canadian Airlines a wholly owned subsidiary.

Air Canada is obliged by its commitments to the Minister of Transport to ensure that Calm Air, Air NorTerra doing business as Canadian North, and Air Georgian receive the support services previously provided by Canadian Airlines for a period of three years. It also committed to no involuntary lay-offs or relocations of unionized employees of the airlines and their wholly owned subsidiaries through March 2002. In addition, Air Canada committed to ensuring that services would be maintained for three years to all the communities served by it, Canadian Airlines and their wholly owned regional affiliates.

The Legislation

On February 17, 2000, the federal government introduced Bill C-26[10] as its legislative response to the restructuring of Canada's airline industry and, in particular, the acquisition of Canadian Airlines by Air Canada. Bill C-26 addressed the government's plan for protecting the public interest set out in *A Policy Framework for Airline Restructuring in Canada*, released by the Minister of Transport on October 26, 1999, which could not be implemented without amendments to existing legislation. The Bill also proposed to entrench into law the commitments and undertakings that were made by Air Canada to the Minister of Transport and the Commissioner of Competition. It also reflected many of the recommendations made by the standing committees of the House of Commons and Senate, which were tasked with reviewing the policy framework in 1999.

Bill C-26 introduced amendments to the *Canada Transportation Act* (1996) designed to respond to the present and future restructuring of the airline industry. It set out a new process for the review of significant mergers and acquisitions in the air mode. The Bill provides for a full review by the Commissioner of Competition, the Minister of Transport and the Canadian Transportation Agency, but gives the Government of Canada the final decision and allows the government to attach terms and conditions. It was this process that was used to review Air Canada's acquisition of Canadian Airlines.

Amendments were also made to the *Canada Transportation Act* with respect to exit provisions, prices on monopoly routes, domestic terms and conditions of carriage, exclusive use clauses in confidential contracts, and the establishment of an Air Travel Complaints Commissioner within the Canadian Transportation Agency to deal with growing consumer complaints (see Chapter 13 "Passenger Transportation" for details).

With a view to fostering competition, Bill C-26 also amended the *Competition Act* to include behaviour by a person operating a domestic air service in its listing of anti-competitive behaviour; and allow the Governor-in-Council to define, by regulation, anti-competitive acts or predatory behaviour in the airline industry.[11] It also gave the Commissioner of Competition the power to issue temporary cease and desist orders in cases of predatory behaviour in the airline industry. Travel agents were specifically named as being able to collectively negotiate commissions on ticket sales for domestic flights without being in contravention of this Act.

The Bill also amended the *Air Canada Public Participation Act* to officially deem the acquisition of Canadian Airlines approved and to make the commitments and undertakings given by Air Canada legally binding and enforceable. Included in these undertakings were the issues of surrendering slots and facilities at airports; offering Canadian Regional Airlines Limited for sale; providing access to Air Canada's frequent flyer program, joint fare agreements and interlining; and changing the way incentive override commissions are paid to travel agents for sales of domestic air travel.

Bill C-26 amended this same Act to place an obligation on Air Canada to ensure that its subsidiaries, both existing and future, will provide services in both official languages in those cases where Air Canada would have been required to do so and where there is significant demand as defined by the *Official Languages Act*. Transition periods are provided to take into account operational difficulties related to implementation in Western Canada and points previously served only by Canadian Airlines and Canadian Regional Airlines.

Finally, the *Air Canada Public Participation Act* was also amended to increase the individual voting share ownership limit from 10 per cent to 15 per cent.

Bill C-26 was given Royal Assent on June 29, 2000, and was proclaimed into law on July 5, 2000.

10 Entitled "An Act to amend the *Canada Transportation Act*, the *Competition Act*, the *Competition Tribunal Act* and the *Air Canada Public Participation Act* and to amend another Act in consequence."

11 These regulations came into effect on August 23, 2000. - SOR/2000-324. (Published in Canada Gazette, Part II, Statutory Order and Regulations, year 2000, 324th order in the year.)

Major Commercial Air Services

With its acquisition of Canadian Airlines, Air Canada reinforced its position as the nation's largest airline, with more than 80 per cent of the capacity offered in Canada.[12] Airlines not affiliated with Air Canada but also providing domestic air services using large jet aircraft include Canada 3000 Airlines Limited, Royal Aviation, First Air, Air NorTerra doing business as Canadian North, WestJet Airlines Ltd. and CanJet Airlines. Air Transat AT Inc. and Skyservice Airlines Inc. also operated domestic jet air services but for tour operators and only on a seasonal basis.

Scheduled air services are largely defined by Air Canada, which, along with its wholly owned subsidiaries and commercial partners, provided the only comprehensive Canadian network of domestic, transborder and international air services. This network is further enhanced and expanded by Air Canada's membership in the STAR Alliance. It and other comprehensive global alliances of international airlines are able to offer, through code-sharing,[13] a seamless travel experience on one ticket, even if more than one airline within the alliance is involved in the itinerary. Canadian Airlines ceased to be a member of the Oneworld global alliance on June 1, 2000, and became a member of the STAR Alliance by virtue of its status as an Air Canada subsidiary. Table 11-12 sets out global airline alliances in 2000.

TABLE 11-12: GLOBAL AIRLINE ALLIANCES, 2000

STAR	Oneworld	Wings	Delta/Air France
Air Canada	Aer Lingus	Braathens	AeroMexico
Air New Zealand	American Airlines	Continental Airlines	Air France
All Nippon Airways	British Airways	Kenya Airways	Delta Airlines
Ansett Australia	Cathay Pacific	KLM Royal Dutch Airlines	Korean Airlines
Austrian Airlines	Finnair	KLM UK	
British Midland	Iberia	Northwest Airlines	
Lufthansa	LanChile		
Mexicana Airlines	Qantas		
SAS Scandinavian Air System			
Singapore Airlines			
Thai Airways International			
United Airlines			
VARIG			
Associated:	**Associated:**	**Associated:**	**Associated:**
	Air Pacific	Air China	
	Japan Airlines	Japan Air System	
	Sabena	Malaysia Airlines	
	Swissair		

Source: Alliance Web sites, Airline Business Monthly Publication

Canada's other operators of large jet aircraft equipment continued to be the price leaders for long-haul travel. These operators include Canada 3000 Airlines, Royal Aviation, Air Transat and Skyservice. Their presence provided extra capacity and, notwithstanding fuel price increases during 2000, disciplined the price of air fares. Canada 3000 and Royal Aviation evolved rapidly from their charter air services roots into scheduled air service operators, coinciding with the consolidation and realignment of capacity on medium and long-haul routes by Air Canada following its acquisition of Canadian Airlines.

Tables 11-13 and 11-14 show the capacity share of Air Canada and the other significant Canadian operators of air services in Canada's domestic and international markets for December 1999 and 2000.

TABLE 11-13: CAPACITY SHARES OF AIRLINES, DECEMBER 1999

Domestic Markets	*Trans-continental*	*Western Canada*	*Eastern Canada*	*Northern Canada*	*Total Domestic*
Average Daily Seat-Kilometres (thousands)	62,686	25,066	29,346	4,029	121,127
Per cent of Shares					
Air Canada and affiliates	53	29	63	15[1]	50
Canadian and affiliates	39	37	24	58[2]	36
WestJet	0	25	0	0	5
Royal Airlines	1	3	4	0	2
Canada 3000	5	2	3	0	4
Air Transat	2	0	1	0	1
First Air	0	0	1	20	1
Other	0	4	4	7	2

International Markets	*Trans-border*	*Atlantic*	*Pacific*	*Southern*	*Total International*
Average Daily Seat-Kilometres (thousands)	121,568	111,406	73,013	41,298	347,285
Per cent of Shares					
Air Canada and affiliates	35	36	17	18	29
Canadian and affiliates	15	13	35	5	18
Foreign Airlines	41	44	45	8	39
Charter Airlines	9	7	3	69	14

Note: Percentages may not add up to 100 per cent due to rounding.

1 Flights shown here are operated by NWT Air on behalf of Air Canada. NWT Air is owned by First Air which operates under its own code.

2 Canadian North/Air NorTerra services were included in Canadian Airlines for 1999.

Source: Published airline schedules and historical data

The consolidation and realignment of domestic capacity by Air Canada prompted a response from low-cost jet operators. WestJet Airlines expanded its flight frequencies, capacity and networks in 2000. Established in February 1996, WestJet took delivery of four 125-seat B737-200 aircraft to bring its fleet total to 21. These aircraft were used to increase flight frequency and add three locations to its network. As a western-based

12 In terms of daily seats offered, Air Canada's share has moved down from 82.5 per cent in December 1999 to 71.5 per cent in December 2000.

13 Code-sharing is the ability to sell air travel under one airline's name on the flights of another airline. In the international context, code-sharing allows airlines to sell transportation on the network of services of code-share partners as if it was their own. In addition, by co-ordinating their marketing efforts, alliance partners can provide a combined product to the consumer, including common check-in, better co-ordinated connections, and priority baggage transfers.

TABLE 11-14: CAPACITY SHARES OF AIRLINES, DECEMBER 2000

Domestic Markets	*Trans-continental*	*Western Canada*	*Eastern Canada*	*Northern Canada*	*Total Domestic*
Average Daily Seat-Kilometres (thousands)	63,508	22,723	32,394	4,057	122,682
Per cent of Shares					
Air Canada and affiliates	87	61	74	33[1]	77
WestJet	2	33	2	0	8
CanJet	2	0	7	0	3
Royal Airlines	3	0	8	0	4
Canada 3000	5	2	3	0	4
Air Transat	2	0	1	0	1
First Air	0	0	1	20	1
Other	0	4	4	48[2]	3

International Markets	*Trans-border*	*Atlantic*	*Pacific*	*Southern*	*Total International*
Average Daily Seat-Kilometres (thousands)	136,169	116,207	75,279	43,970	371,625
Per cent of Shares					
Air Canada	47	52	55	21	47
Foreign Airlines	41	41	42	14	38
Charter Airlines	11	6	3	65	15

Note: Percentages may not add up to 100 per cent due to rounding.
1 Flights shown here are operated by NWT Air on behalf of Air Canada. NWT Air is owned by First Air which operates under its own code.
2 Canadian North/Air NorTerra services were included in Canadian Airlines for 1999.

Source: Published airline schedules and historical data

operator, WestJet made the move in early 2000 to expand east of Winnipeg, adding Hamilton to its network in March, Moncton in April and Ottawa in June. At year-end, WestJet was offering its low-fare passenger air services to 15 Canadian cities.[14]

CanJet Airlines, Canada's newest airline offering scheduled jet services, began low-cost operations on September 5, 2000, with up to three daily frequencies between Toronto, Ottawa and Halifax, as well as two daily frequencies between Toronto and Windsor. At the end of September, CanJet added schedule frequencies to Winnipeg, Montreal and St. John's. CanJet subsequently left the Windsor market on November 27, 2000, citing unsustainable economics. Nevertheless, CanJet continued to grow, adding a sixth 120-seat B737-200 jet to its fleet and expanding to more than 250 flights a week to points in central and eastern Canada.[15]

At year-end, the transition toward a more competitive environment continued. Air carriers such as WestJet, Canada 3000 and Royal Aviation increased their route networks and put several new planes on order to further expand services. In addition, two other companies, Roots Air and London Air, formally announced their interest in becoming licensed operators of air services in 2001.

Table 11-15 shows the type of aircraft in the fleets of a number of Canadian air carriers.

TABLE 11-15: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE

Carrier	*Wide-bodied*	*Narrow-bodied*	*Propeller-driven*	*Total*
Air Canada	74	167	0	241
Air Canada wholly owned affiliates:				
Air BC	0	5	14	19
Air Nova	0	5	36	41
Air Ontario	0	0	28	28
Canadian Regional	0	28	16	44
Air Canada other partners:				
Calm Air International	0	0	11	11
Air Georgian/Ontario Regional	0	0	13	13
Central Mountain Air	0	0	14	14
Canadian North[1]	0	4	0	4
Air Transat	18	5	0	23
Canada 3000[2]	4	13	0	17
Royal Aviation[2]	4	12	1	17
First Air	0	7	19	26
CanJet	0	6	0	6
SkyService[3]	0	5	3	8
WestJet	0	22	0	22
Total	**100**	**279**	**155**	**534**

1 Operated by Air NorTerra Inc.
2 Canada 3000 and Royal Aviation will merge in 2001.
3 Will be operating as a full service airline under the name, Roots Air.

Source: BACK/Lundkvisk Fleet Database and carriers' Web sites, as of December 31, 2000

In terms of cargo, Kelowna Flightcraft continued its arrangement with Canada's largest courier operator, Purolator, to provide its daily flying requirements. In addition, a number of Canadian air carriers act on behalf of integrated courier operators to move time-sensitive goods within Canada. These carriers include All Canada Express, 2734141 Canada Inc. doing business as Knighthawk Air Express, Morningstar Air Express Inc., ICC International Cargo Charter Canada Ltd., Western Express Air Line Inc., Airwave Transport, Perimeter Airlines (Inland) Ltd., Royal Cargo and First Air. Table 11-16 shows these Canadian operators and their affiliated courier companies.

TABLE 11-16: CANADIAN AIR CARGO AIRLINES

Operator	*Courier/All-Cargo Company*
Kelowna Flightcraft	Purolator/ Royal
All Canada Express	BAX/UPS/DHL/Royal
Royal Cargo	Royal
Morningstar	Fed Ex
Knighthawk Air Express	Fed Ex
ICC Canada	Emery
First Air	Emery

Source: Transport Canada, Air Policy

14 These cities include Victoria, Vancouver, Abbotsford/Fraser Valley, Prince George, Kelowna, Calgary, Edmonton, Grande Prairie, Saskatoon, Regina, Winnipeg, Thunder Bay, Hamilton, Ottawa and Moncton.

15 At year-end, CanJet was serving Winnipeg, Toronto (Pearson Terminal III), Ottawa, Montreal (Dorval), Halifax and St. John's.

A breakdown of the number of air carrier licence authorities that operate to, from and within Canada are listed in Table 11-17. This table includes all the authorities held to operate scheduled, non-scheduled and all-cargo services.

TABLE 11-17: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 2000

	Canadian				*Other*	
Type	*Small*	*Medium*	*Large*	*All-Cargo*	*US*	*Foreign*
Classification						
Domestic	861	22	13	33	-	-
International						
Scheduled	13	28	74	5	49	59
Non-Scheduled	427	20	11	25	756	85
Total Type	1,301	70	98	63		
Total Canadian	1,532					
Total US					805	
Total Other Foreign						144

Note: Represents licence authorities, not the number of carriers; e.g. a carrier can hold multiple licence authorities.

Source: Canadian Transportation Agency

Regional and Local Air Services

During 2000, the regional and local air services provided by Air Canada's subsidiaries and commercial partners (including Canadian Airlines' regional air service provider, Canadian Regional Airlines) underwent an extensive review following Air Canada's acquisition of Canadian Airlines.

As part of the understanding made by Air Canada to the Commissioner of Competition on December 21, 1999, Canadian Regional Airlines was to be offered for sale for a 60-day period for no less than an amount agreed to between Air Canada and the Competition Bureau. The carrier, with 2,000 employees and 51 aircraft, serves 38 points in seven provinces and five states, but has its main focus in western Canada. On August 29, 2000, the 60-day period expired with no acceptable bids received. Air Canada was therefore able to keep the carrier and announced its intention to merge Canadian Regional Airlines with its other regional carriers to focus on regional and local air services, with a head office in Halifax and a western hub in Calgary. Together, the merged entity would operate with 4,900 employees and 134 aircraft. The full integration of the regional affiliates had not yet been completed at the end of 2000.

Table 11-18 shows the regional carriers in commercial partnership with Air Canada as of December 31, 2000.

TABLE 11-18: AIR CANADA'S DOMESTIC CODE-SHARE PARTNERS AS OF DECEMBER 31, 2000

100 per cent owned affiliates	*Other partners*
Air BC	Air Creebec
Air Nova	Air Georgian
Air Ontario	Aviation Quebec Labrador
Canadian Regional	Calm Air Central Mountain Air Labrador Airways NWT Air[1]

1 Owned by First Air.

Source: Air Canada

Independent airlines (those not affiliated with either Air Canada or Canadian Airlines) avoided competing directly with Air Canada's regional affiliates. This resulted in little overlap among their services and those provided through the Air Canada network. Independent carriers are most prominent in the northern parts of Canada. However, some independent carriers, notably Hawkair, Provincial Airlines and Régionnair, pursued more aggressive strategies, competing with Air Canada's regional affiliates. Table 11-19 lists a number of independent airlines and their major bases of operation.

Inter-Canadien, an independently owned commercial partner of Canadian Airlines that provided regional services in Quebec and the Atlantic provinces ceased operations in late November 1999 while it attempted to restructure its debt. Canadian Regional Airlines and Air Georgian, along with Air Nova, and Régionnair adjusted their schedules and expanded their services to ensure most of the communities in remote areas of Quebec and northern New Brunswick previously served by Inter-Canadien continued to receive scheduled air services. Although Inter-Canadien initially announced its intention to resume service in early 2000, it did not.

TABLE 11-19: LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF DECEMBER 31, 2000

Airline	*Major Base(s)*
Air Creebec	Montreal, Timmins and Val d'Or
Air Mikisew	Fort McMurray
Air North	Whitehorse
Air Tindi Ltd.	Yellowknife
Aklak Air	Inuvik
Aviation Quebec Labrador	Sept-Îles
Bearskin Airlines	Sudbury and Thunder Bay
Buffalo Airways Ltd.	Yellowknife
Calm Air International Ltd.	Thompson, Rankin Inlet
Capital City Air[1]	Edmonton
Harbour Air Ltd.	Vancouver Harbour
Hawkair	Terrace
Helijet Airways	Victoria Harbour and Vancouver Harbour
K.D. Air	Vancouver
Keewatin Air Limited	Rankin Inlet and Churchill
Kenn Borek Air	Iqaluit and Resolute
Keystone Air Service	Winnipeg
Labrador Airways	Goose Bay and St. John's
Nakina Air Service Ltd.	Thunder Bay
North Vancouver Air	Vancouver
Northwestern Air Lease Ltd.	Grande Prairie and Yellowknife
North-Wright Airways Ltd.	Norman Wells and Yellowknife
Pacific Coastal Airlines Limited	Vancouver
Peace Air	Edmonton
Perimeter Airlines	Winnipeg
Provincial Airlines	Goose Bay and St. John's
Régionnair Inc.	Sept-Îles
Skyward Aviation Ltd.	Rankin Inlet and Thompson
Transwest Air[2]	Saskatoon
Trillium Air	Kitchener
West Coast Air	Vancouver Harbour

1 Capital City Air announced that it was merging its operations into Peace Air in the fall of 1999. It announced later in February 2000 that its talks with Peace Air failed and it was ceasing operations.
2 Air Sask and Athabasca Airways merged in 2000 to form Transwest Air.

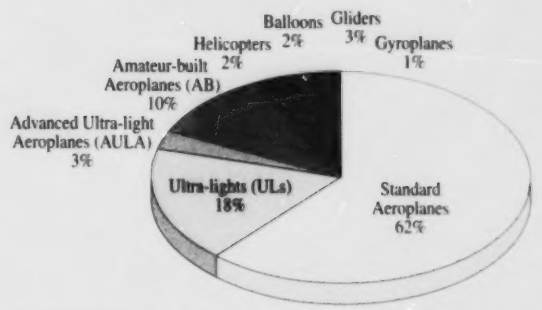
Source: Official Airline Guide

GENERAL AVIATION

The general aviation sector is made up of all types of aviation activity, except air transportation of passengers or goods, and includes both recreational and commercial flying activities.

General aviation represents about 50 per cent of all aircraft movements at airports with air navigation services, although much of the activity was at non-controlled airports. Recreational flying in its various forms accounts for the majority of general aviation activity. It represents two-thirds of Canada's pilots and three quarters of all aircraft registered in Canada in 2000, and it is the largest segment of Canadian civil aviation activity. Details about the recreational aviation fleet can be found in Figure 11-6 and Table 11-20. In addition, Tables 11-21 and 11-22 summarize the number of pilot licences and permits issued by category and province.

FIGURE 11-6: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000



Note: Airships and ornithopters are included in the balloon and gyroplane categories, respectively.

Source: Canadian Civil Aircraft Register

TABLE 11-20: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000

Type of aircraft	*Total aircraft*
Standard Aeroplanes	13,366
Ultra-lights (ULs)	3,850
Advanced Ultra-light Aeroplanes (AULAs)	617
Amateur-built Aeroplanes (AB)	2,281
Helicopters	390
Balloons[1]	442
Gliders	600
Gyroplanes[2]	187
Total Private registered aircraft	**21,733**

1 Includes airships.
2 Includes ornithopters.

Source: Canadian Civil Aircraft Register

TABLE 11-21: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 2000

	In Force	*Issued in 2000*	*Male*	*Female*
Aeroplanes				
Private Pilots	28,240	2,860	26,628	1,612
Commercial Pilots	9,625	1,370	9,041	584
Airline Transport Pilots	11,087	661	10,744	343
Total	48,952	4,891	46,413	2,539
Helicopters				
Private Pilots	384	66	371	13
Commercial Pilots	2,793	218	2,726	67
Airline Transport Pilots	726	63	713	13
Total	3,903	347	3,810	93
Permits				
Glider Pilot	5,991	424	5,296	695
Gyroplane Pilot	32	7	31	1
Balloon Pilot	267	11	245	22
Ultra-Light Pilot	2,534	199	2,452	82
Recreational Pilot	1,121	223	1,052	69
Total	9,945	864	9,076	869
Other Licences				
Flight Engineers	537	19	526	11
Air Traffic Controllers	1,986	56	1,832	154
Total	2,523	75	2,358	165
Total Licences & Permits	**65,323**	**6,177**	**61,657**	**3,666**

Source: Transport Canada, Safety and Security

TABLE 11-22: PERSONNEL LICENCES AND PERMITS BY PROVINCE, AS OF DECEMBER 2000

	Number of Licences	*Per cent of Total*
British Columbia	13,838	19.1
Alberta	9,567	13.2
Saskatchewan	2,901	4.0
Manitoba	3,618	5.0
Ontario	24,382	33.6
Quebec	12,925	17.8
New Brunswick	1,131	1.6
Nova Scotia	2,054	2.8
Prince Edward Island	182	0.3
Newfoundland	1,206	1.7
Yukon	335	0.5
Northwest Territories	447	0.6
Canada	72,586	100

Note: Student Pilot Permits are included in the provincial numbers.

Source: Transport Canada, Safety & Security

Specialty Air Services

Specialty air services are made up of a variety of industrial and agricultural air activities that share the common characteristic of not involving the movement of passengers or cargo between two points. These activities include parachute jumping, glider towing, aerial forest fire management and firefighting, aerial inspection and construction, aerial photography and surveying, advertising, meteorological services, crop spraying, heli-logging and air-cushion vehicle services (hovercraft). While some large companies take part in these specialty activities, the majority of companies in this sector are small operators serving local requirements.

Business Aviation

Business aviation continued to grow in 2000 for the sixth consecutive year. One factor fuelling this growth is the desire of corporations to move executives and staff more efficiently than commercial airline services. A strong economy, international business interests, and a wider selection of aircraft types have helped to expand this sector. One option that is adding exponential growth in the United States and Europe is the use of "fractional ownership," whereby individuals or businesses that would not otherwise own an aircraft by themselves share its use in a program by selling units of flight time. Fractional ownership in Canada is in its infancy, due in part to market size. In Canada, fractional ownership programs are regulated as commercial air activities. Fractional ownership has significant growth potential for the business aviation sector and will be followed closely during the next few years.

FREIGHT TRANSPORTATION 12

The freight flows continued to be driven by the sustained growth of the Canadian economy.

This chapter looks at freight transportation, discussing domestic, and when possible, international freight movements, by mode. This approach best demonstrates what use is made of each mode of transportation.

This chapter also discusses freight traffic by commodity group. The rail and truck modes use tonne-kilometres when referring to freight. Capturing both volume and distance, this unique physical measurement of freight movement helps assess trends in traffic.

RAIL TRANSPORTATION

In its Canadian operations, CN's revenue tonne-kilometres rose to 158 billion, up from 154 billion in 1998, while CPR's revenue tonne-kilometres dropped slightly to 113 billion, from 115 billion the previous year.

However, Class II carriers — regional and shortline railways — experienced an estimated six per cent decrease in output in 1999, returning to a traffic level close to that of 1997, with approximately 28 billion revenue tonne-kilometres. While several new operations contributed to an increase in output, a drop in iron ore traffic resulted in an overall decrease.

Output for both CN's and CPR's systems (Canadian and US operations) increased again in 2000. CN reported 218 billion revenue tonne-kilometres, up from 210 billion in 1999 (including Illinois Central output), while CPR reported 161 billion tonne-kilometres, up from 146 billion in 1999.

As a result, figures for Canadian operations are also expected to rise for the year 2000. The estimated output (based on three quarters of data on Canadian operations and four quarters of system data) is 120 billion revenue tonne-kilometres for CPR and 165 billion revenue tonne-kilometres for CN.

RAIL TRAFFIC — TRADE WITH THE US

EXPORTS

In 1999, exports increased 4.8 per cent over 1998 levels in terms of tonnage to 59 million tonnes and 25 per cent in terms of value. As Table 12-1 shows, exports in certain commodity sectors decreased, namely coal, agricultural and food products, and fertilizers. On the other hand, exports in some sectors increased significantly. Forest products comprised the most prominent sector in terms of tonnage, accounting for 36 per cent of total export tonnage. In terms of value, however, forest products ranked second to automotive vehicles and parts, which accounted for nearly 55 per cent of the value of exports. Trade in vehicles and parts rose by 35 per cent in terms of tonnage and 45 per cent in terms of value, and was the main contributor to the overall increase in the value of exports.

Ontario was the major contributor to growth, with 1.2 million more tonnes exported than in 1998; over half of this increase was attributable to automotive products. As Table 12-2 shows, Ontario continued to account for the largest portion of exports, increasing its share marginally to 29.4 per cent of tonnage. Saskatchewan, Alberta, Quebec and British Columbia had shares ranging from 14 to 19 per cent. In terms of percentage growth in exports in 1999, however, the other provinces and territories experienced the greatest increase. Prince Edward Island nearly tripled its exports eventually crossing the US border by rail, while Nova Scotia saw a 75 per cent increase. The territories also increased their rail exports substantially. For each of these regions, forest products, lumber and wood pulp in particular, were the main contributors to growth.

TABLE 12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1998 AND 1999

	Exports				Imports			
	1999 tonnage (000)	*Per cent growth over 1998*	*1999 value ($ millions)*	*Per cent growth over 1998*	*1999 tonnage (000)*	*Per cent growth over 1998*	*1999 value ($ millions)*	*Per cent growth over 1998*
Grain	4,053	4.3	747	(3.8)	466	12.2	164	5.4
Other agriculture and food	1,461	(1.5)	883	(7.9)	2,317	47.7	1,054	(5.9)
Automotive	2,737	35.3	38,831	44.9	670	13.5	10,706	4.9
Chemicals	8,893	(0.2)	4,589	7.9	4,534	5.5	4,054	3.0
Coal	410	(11.9)	39	3.6	161	(9.5)	15	(12.7)
Fertilizers	7,955	(4.0)	997	(1.6)	69	(14.7)	13	(28.3)
Forest products	21,147	7.4	15,372	12.0	1,108	(5.6)	641	0.6
Manufactured products	1,597	10.8	4,286	2.3	1,818	(65.3)	2,564	(33.4)
Metals	3,232	0.8	4,013	(2.3)	1,293	10.4	746	0.4
Mine products	4,121	11.5	307	24.4	2,552	40.9	77	42.6
Petroleum products	3,373	5.1	880	17.5	408	(42.8)	160	(19.9)
Total	**58,979**	**4.8**	**70,945**	**24.8**	**15,397**	**(10.7)**	**20,194**	**(3.5)**

Note: 1998 figures reported in *Transportation in Canada 1999* have since been revised.

Source: Statistics Canada, International Trade Division

IMPORTS

From 1998 to 1999, rail imports decreased in tonnage by 11 per cent to 15.4 million tonnes, and in value by 3.5 per cent to $20.2 billion. As Table 12-1 shows, increases in the imports of relatively low-valued mine products and agricultural and food products were outweighed by decreases in the imports of higher-valued manufactured products. In terms of commodity shares, chemicals ranked the highest, with a 29 per cent share of total tonnage. By value, automotive products accounted for over half of imports, by far the largest share.

Table 12-2 shows that about half of all imports were cleared through customs in Ontario; this province also contributed the largest increase in imported tonnage from 1998 to 1999 (0.9 million tonnes). British Columbia and Quebec each accounted for 14 per cent of imports (cleared), while Alberta, Saskatchewan and Manitoba together cleared 20 per cent.

TABLE 12-2: TRANSBORDER RAIL TRAFFIC BY PROVINCE, 1999

(Thousands of tonnes)

Province of origin (Exports)/ Province of clearance (Imports)	*Exports*	*Imports*
Newfoundland	18	0
Prince Edward Island	18	0
Nova Scotia	941	19
New Brunswick	1,500	469
Quebec	8,564	2,190
Ontario	17,324	7,484
Manitoba	2,101	812
Saskatchewan	11,123	999
Alberta	9,063	1,252
British Columbia	8,315	2,171
Northwest Territories	2	0
Yukon	10	0

Source: Statistics Canada, International Trade Division

RAIL TRAFFIC — OVERSEAS TRADE

Each year, shipments to and from Canadian ports account for a substantial amount of rail traffic. In 1999, Class I railways carried 84.8 million tonnes of goods to and from Canadian ports.

RAIL — MARINE EXPORTS

Grain, sulphur, gypsum, coal and potash accounted for 84 per cent of the 77.7 million tonnes shipped to port by Class I carriers. At 32.4 million tonnes, coal was the largest of these commodities, followed by grain at 20.2 million tonnes. Potash, sulphur and gypsum accounted for 5.1, 4.4 and 3.1 million tonnes, respectively, while forest products accounted for a further 2.5 million tonnes.

Intermodal shipments, mostly mixed and finished goods, totalled 6.4 million tonnes, or eight per cent of total rail–marine exports. Ontario accounted for 1.9 million tonnes of intermodal shipments, followed by the United States at 1.7 million tonnes and Quebec at 1.3 million tonnes.

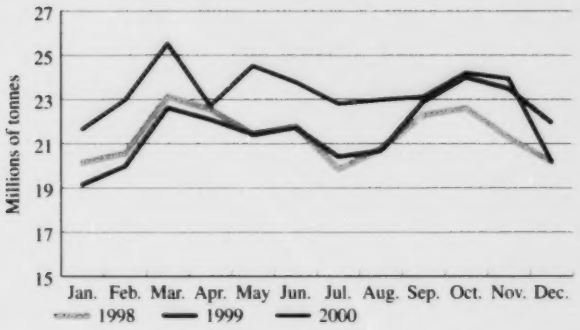
RAIL — MARINE IMPORTS

In 1999, Class I rail shipments from marine ports remained unchanged from the previous year, at 7.1 million tonnes, 84 per cent of which consisted of intermodal movements. Phosphate rock, with 0.7 million tonnes imported, remained the most prominent single commodity. Of all goods shipped in from marine ports, the majority went to Ontario (2.6 million tonnes), followed by Quebec (2.1 million tonnes) and the United States (1.1 million tonnes). British Columbia was the end destination for just under one million tonnes of goods shipped in from port by rail.

RAIL TRAFFIC — COMMODITY SECTORS

Annual rail loadings reached their highest levels in over a decade, with 278 million tonnes loaded in 2000.[1] Volumes were approximately split between eastern and western loadings, although the commodity mixes differed geographically. Ores and mine products, forest products and intermodal shipments dominated in the east, while grain, coal and fertilizers were the major commodities loaded in the west. Figure 12-1 shows monthly loadings from 1998 to 2000.

FIGURE 12-1: TOTAL MONTHLY LOADINGS BY RAIL, 1998 – 2000

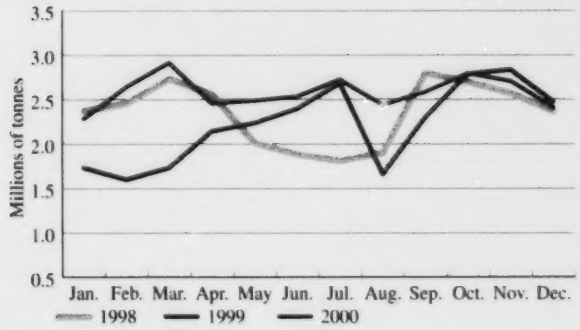


Source: Statistics Canada, Cat. 52-001; Transport Canada

GRAIN

Grain traffic in 2000 exceeded that of the previous two years as shown in Figure 12-2. Annual tonnage reached 30.9 million, almost 17 per cent higher than in 1999. Grain continued to be one of the most important commodities shipped by rail, accounting for 11 per cent of total annual tonnage loaded.

FIGURE 12-2: MONTHLY GRAIN LOADINGS BY RAIL, 1998 – 2000



Source: Statistics Canada, Cat. 52-001; Transport Canada

FOREST PRODUCTS

Loadings of processed forest products such as lumber and paper continued to grow, up about six per cent from 1999 to 23.7 million tonnes. Most of the increased loadings were from the eastern provinces. Flows of unprocessed products remained level, at 16.7 million tonnes. Forest products in total accounted for 14.5 per cent of annual rail tonnage.

ORES AND MINE PRODUCTS

Iron ore flows rebounded to 1998 levels with a total of 39 million tonnes loaded. Other ores and mine product traffic continued to grow to its highest level in over a decade, up seven per cent from 1999 to 24.5 million tonnes. In this group, alumina accounted for about five million tonnes loaded. Building materials (sand, gravel, crushed stone, and cement) and nickel, lead and zinc ores and concentrates together accounted for another 10 million tonnes.

The ores and mine products group made up 23 per cent of total rail traffic loaded in 2000, compared with 21 per cent the previous year.

FERTILIZERS AND FERTILIZER MATERIALS

Potash made up 52 per cent of this category, with 14.2 million tonnes loaded in 2000. This traffic level was up seven per cent from last year. Sulphur loadings reached 7.5 million tonnes, comparable with 1999.

The pattern of phosphate rock shipments established last year continued. Since a domestic source was discovered, use of imported material dropped off and 0.5 million tonnes were shipped from Ontario westward by rail in 2000.

Fertilizers and fertilizer materials accounted for 27.2 million tonnes in aggregate, 10 per cent of total traffic loaded in 2000.

COAL

Coke and coal shipments were down from 43.3 million tonnes in 1999 to 40.6 million tonnes in 2000, closer to 1998 levels. The drop in traffic may have been partly attributable to the August 2000 closure of the Quintette coal mine in Tumbler Ridge, British Columbia, due to falling coal prices.

Coal accounted for 14.5 per cent of total loadings.

1 Preliminary data.

Industrial Products

Metals, autos and parts, refined petroleum products and chemicals accounted for 14.5 per cent of traffic loaded in 2000.

Metals and automotive traffic remained comparable with 1999 levels, with loadings reaching 9.3 and 5.0 million tonnes, respectively. Petroleum product traffic grew four per cent to 11.4 million tonnes, and chemical traffic rose eight per cent to 14.5 million tonnes.

Intermodal

Although the intermodal sector did not post the exceptional growth experienced in 1999, it did grow by over 10 per cent in 2000 to reach 26.1 million tonnes. Container-on-flat-car traffic increased 10 per cent to 24.4 million tonnes, and trailer-on-flat-car traffic increased eight per cent to 1.6 million tonnes. Slightly more loadings occurred in eastern Canada than in the west.

Intermodal traffic accounted for 9.4 per cent of total loadings in 2000.

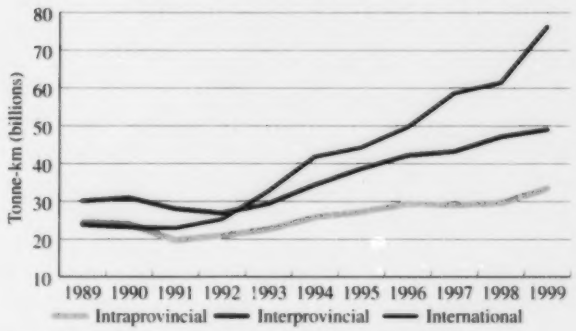
TRUCKING TRANSPORTATION

Domestic versus International Traffic

From 1989 to 1999, international for-hire trucking traffic soared from 24 billion to 76 billion tonne-kilometres, accounting for an average annual increase of 12.4 per cent. Domestic trucking traffic grew at a more modest rate of 4.2 per cent over the same period, from 54 billion to 82 billion tonne-kilometres. In both sectors, growth was more vigorous after the 1990 – 1992 recession period. Figure 12-3 illustrates the growth in annual truck traffic in tonne-kilometres between 1989 and 1999.

Given these increases over the last decade, the relative importance of domestic and international markets in the total traffic of Canadian-based for-hire trucking firms has changed. The international market, which represented 30 per cent of the total tonne-kilometres moved in 1989, jumped to a 48 per cent share in 1999, while the domestic market share declined.[2]

FIGURE 12-3: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1989 – 1999



Source: Statistics Canada, Trucking in Canada, Cat. 53-222; Transport Canada

In 1999, Ontario dominated in terms of tonne-kilometres hauled by Canadian-based for-hire carriers. It captured 38 per cent of total intraprovincial traffic, 33 per cent of traffic moved to other provinces, and 46 per cent of total international traffic. Of the 159 billion tonne-kilometres hauled by Canadian truckers in 1999, over 64 billion involved Ontario.

Table 12-3 shows the distribution of for-hire trucking traffic by sector and province for 1999. Table 12-4 indicates the main northbound and southbound traffic flows moved internationally by Canadian-based for-hire carriers. Deliveries to and from the US central states accounted for the largest share of traffic with 28 billion tonne-kilometres, or 37 per cent of total tonne-kilometres.

TABLE 12-3: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1999

(Billions of tonne-kilometres)

	Intra-provincial	*Inter-provincial*	*Inter-national*	*Total*	*Per cent share*
Ontario	12.81	16.27	35.16	64.23	40.5
Quebec	6.73	9.58	18.02	34.33	21.6
Alberta	5.52	8.67	6.98	21.17	13.3
Manitoba, Saskatchewan and territories	2.47	5.76	4.68	12.92	8.1
British Columbia	4.07	4.71	6.67	15.45	9.7
Atlantic provinces	1.88	4.02	4.67	10.56	6.7
Total	**33.47**	**49.00**	**76.18**	**158.66**	**100.0**

Notes: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers; "International" includes exports and imports; "Inter-provincial" are loadings based; "Territories" include Yukon, Nunavut and Northwest Territories.

Source: Statistics Canada, special tabulation

2 The declining domestic share of total trucking tonne-kilometres is not as dramatic as indicated. Domestic traffic moved by Canadian-based trucking firms is *underestimated*, as small for-hire (earning annual revenues between $30,000 and $1 million), private and owner-operator activities are only partly accounted for in Statistics Canada's *For-Hire Trucking (Commodity Origin/Destination) Survey*.

TABLE 12-4: INTERNATIONAL FOR-HIRE TRUCK TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1999

(Billions of tonne-kilometres)

Province	US Region[1]	Southbound movements "Exports"	Northbound movements "Imports"	Total	Per cent Share
Ontario	US Central	8.79	7.76	16.55	21.7
Ontario	US South	4.71	4.90	9.60	12.6
Quebec	US North East	3.81	1.74	5.55	7.3
Quebec	US South	3.02	2.50	5.51	7.2
Quebec	US Central	3.32	1.78	5.10	6.7
Ontario	US North East	2.71	2.20	4.91	6.4
Prairie prov.	US Central	2.59	2.05	4.64	6.1
Ontario	US West	1.87	2.07	3.94	5.2
British Columbia	US West	2.07	1.42	3.49	4.6
Prairie provinces	US West	1.86	1.35	3.21	4.2
Sub-total		**34.74**	**27.76**	**62.50**	**82.0**
Other Movements		8.34	5.35	13.69	18.0
Total		**43.07**	**33.11**	**76.18**	**100.0**

Note: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.

1 US North East includes New England and Middle Atlantic states.
US Central includes states bordering the Great Lakes and other central states such as North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.
US West includes Pacific states and Western Mountain states.

Source: Transport Canada, adapted from Statistics Canada, special tabulations

TRUCK TRAFFIC BY COMMODITY

In terms of volume carried, total truck traffic in 1999 amounted to 158.7 billion tonne-kilometres. Of this, 52 per cent, or 82.5 billion tonne-kilometres, were moved domestically and 48 per cent, or 76.2 billion tonne-kilometres, were hauled internationally. Five commodity groupings represented over 75 per cent of all tonnage carried. Forest products led the group with 20 per cent of total tonne-kilometres, followed by food products at 19 per cent, miscellaneous products (or end-products) at 18 per cent, and manufactured products and steel/alloy products at 10 per cent each.

On the domestic front, food products represented 13.3 billion tonne-kilometres, or 27 per cent of total interprovincial tonne-kilometres. Miscellaneous products ranked second with a 21 per cent share. While interprovincial traffic totalled 49 billion tonne-kilometres in 1999, intraprovincial shipments totalled 33.5 billion tonne-kilometres. Forest products led intraprovincial traffic with 27 per cent of tonne-kilometres moved, followed by petroleum products with 14 per cent, and food products with 13 per cent.

In 1999, Canadian-based carriers moved 42.8 billion tonne-kilometres of exports, or 57 per cent of total international trucking traffic. Forest products were the main exported commodity group, with 27 per cent of total trucking exports, followed by miscellaneous products and manufactured products. On the import side, miscellaneous products and food products dominated, with 21 per cent and 19 per cent, respectively. In total, Canadian-based trucking carriers shipped nearly 33.1 billion tonne-kilometres northbound in 1999.

Domestic and international traffic generated $7 billion and $6.1 billion in transportation revenues, respectively. The same five commodity groups that dominated tonne-kilometres moved also dominated trucking revenues, with 73 per cent of the total. Miscellaneous products ranked first, generating $2.4 billion, or 18 per cent of total revenues, followed mainly by food products, with $2.2 billion, and forest products, with $1.9 billion.

Table 12-5 shows the volume of for-hire trucking traffic by major commodity group in 1999. Table 12-6 indicates the revenues of for-hire trucking activity by sector and major commodity group for the same year.

TABLE 12-5: FOR-HIRE TRUCKING TRAFFIC BY COMMODITY GROUP, 1999

(Billions of tonne-kilometres)

SCTG Commodities[1]	Domestic	International	Total	Per cent of total
Forest products	16.34	15.34	31.68	20.0
Food products	17.79	12.25	30.04	18.9
Miscellaneous products	14.29	13.84	28.13	17.7
Other manufactured	7.01	9.40	16.41	10.3
Steel and alloys	8.11	8.23	16.34	10.3
Automotive products	1.88	6.84	8.72	5.5
Chemical products	4.63	3.77	8.40	5.3
Petroleum products	6.17	0.61	6.79	4.3
Machinery and equipment	2.40	3.92	6.32	4.0
Ores and non-metallic minerals	3.86	1.97	5.83	3.7
Total All Commodities	**82.47**	**76.18**	**158.66**	**100.0**

1 Standard Classification of Transported Goods (SCTG) introduced in 1999 for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

TABLE 12-6: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1999

(Millions of dollars)

SCTG Commodities[1]	Domestic	International	Total	Per cent of total
Forest products	929.1	930.5	1,859.6	14.2
Food products	1,366.6	799.8	2,166.3	16.5
Miscellaneous products	1,386.8	995.2	2,382.0	18.2
Other manufactured products	832.5	976.6	1,809.1	13.8
Steel and alloys products	643.3	661.9	1,305.2	10.0
Automotive products	415.5	810.9	1,226.4	9.4
Chemical products	408.2	299.7	708.0	5.4
Petroleum products	373.8	48.8	422.6	3.2
Machinery and equipment	407.0	530.7	937.7	7.2
Ores and non-metallic minerals	193.8	93.5	287.3	2.2
Total All Commodities	6,956.7	6,147.4	13,104.1	100.0

1 Standard Classification of Transported Goods (SCTG) introduced in 1999 for for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

TRUCK FLEET

Class 8 heavy trucks include those vehicles with a gross vehicle weight of 15,000 kilograms or more. These are typically tractor-trailer combinations with the "18-wheeler" being the most common configuration. Over 270,000 Class 8 trucks were registered across the country in 2000, an increase of about three per cent over 1999. As shown in Table 12-7, Ontario accounted for the most Class 8 trucks at just over 100,000, followed by Alberta with 65,000 and Quebec with 32,000. Nearly three-quarters of the Class 8 registrations were accounted for by these three provinces.

The lighter heavy trucks category with gross weights between 4,500 and 15,000 kilograms contains most of the straight trucks (i.e. the power unit and the cargo space are a single unit) in the country, including most dump trucks, cube vans, and other large delivery trucks. Over 390,000 trucks of this type were registered in 2000, an increase of about one per cent over 1999. Alberta had the single largest number of light heavy trucks at 110,000, followed by Ontario with 80,000 and British Columbia with over 60,000. Nearly two-thirds of the light heavy total was accounted for by these three provinces.

Taken together, over 660,000 heavy trucks were registered in 2000, nearly four per cent of the total number of registered vehicles. Ontario, with over 180,000 heavy trucks, accounted for the largest share at nearly 28 per cent followed by Alberta with 175,000 trucks and Quebec with 83,000.

TRUCK SALES

While sales of new Class 8 truck in 2000 were 10 per cent lower than the record levels enjoyed in 1999, the 27,905 trucks sold did make 2000 the third highest sales year in the past 10 years. As shown in Table 12-8, sales figures were down in almost every province except Alberta and British Columbia, where a gain of approximately 15 per cent was made, and for Prince Edward Island, where sales were nearly the same as last year.

TABLE 12-8: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1998 TO 2000

	1998 Sales	*Per cent of total*	*1999 Sales*	*Per cent of total*	*2000 Sales*	*Per cent of total*
Newfoundland	129	0.4	150	0.5	110	0.4
Prince Edward Island	46	0.2	45	0.1	46	0.2
Nova Scotia	560	1.9	632	2.0	543	1.9
New Brunswick	1,282	4.4	1,437	4.6	1,142	4.1
Quebec	5,682	19.5	6,782	21.9	5,749	20.6
Ontario	11,947	41.1	13,124	42.4	11,163	40.0
Manitoba	1,615	5.6	1,674	5.4	1,224	4.4
Saskatchewan	1,168	4.0	1,107	3.6	1,024	3.7
Alberta	4,402	15.1	3,814	12.3	4,345	15.6
British Columbia	2,265	7.8	2,219	7.2	2,559	9.2
Canada	**29,096**	**100.0**	**30,984**	**100.0**	**27,905**	**100.0**

Source: Canadian Vehicle Manufacturers' Association

Overall, approximately 3,000 fewer trucks were sold in 2000 compared with 1999. Sales of Class 8 trucks in the United States closed the year with four months of steep declines, finishing 19.4 per cent below 1999's record of 262,316 trucks sold. All the major truck manufacturers reported downturns in sales, and the trend seems likely to carry into 2001.

TABLE 12-7: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 2000

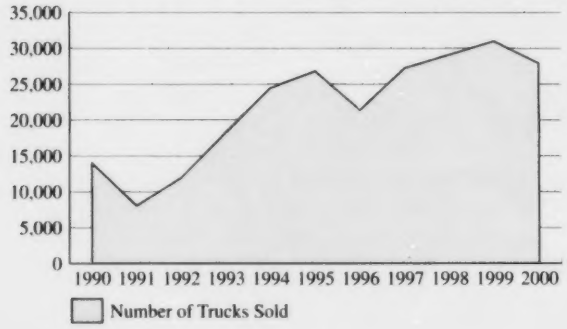
	Light heavy trucks[1]	*Per cent*	*Class 8 trucks*	*Per cent*	*Total heavy trucks*	*Per cent*	*Heavy trucks as a share of all registered vehicles*	*Total registered vehicles*
Newfoundland	4,068	1.0	2,859	1.1	6,927	1.0	2.8	250,953
Prince Edward Island	2,060	0.5	2,576	1.0	4,636	0.7	6.0	77,300
Nova Scotia	9,984	2.6	7,396	2.7	17,380	2.6	3.3	532,265
New Brunswick	10,143	2.6	4,401	1.6	14,544	2.2	3.2	448,440
Quebec	51,491	13.2	32,437	12.0	83,928	12.7	2.1	3,935,526
Ontario	80,226	20.5	103,494	38.3	183,720	27.8	2.8	6,554,988
Manitoba	9,877	2.5	10,975	4.1	20,852	3.2	3.4	608,121
Saskatchewan	50,683	13.0	25,107	9.3	75,790	11.5	10.8	699,615
Alberta	110,186	28.2	65,056	24.1	175,242	26.5	8.3	2,113,644
British Columbia	60,523	15.5	14,038	5.2	74,561	11.3	3.2	2,304,610
Yukon	1,217	0.3	890	0.3	2,107	0.3	9.0	23,487
Northwest Territories	569	0.1	793	0.3	1,362	0.2	7.1	19,287
Nunavut	250	0.1	121	0.0	371	0.1	13.7	2,712
Total	**391,277**	**100.0**	**270,143**	**100.0**	**661,420**	**100.0**	**3.8**	**17,570,948**

1 Vehicles with a gross weight between 4.5 tonnes and 15 tonnes.

Source: Provincial/territorial files submitted to Statistics Canada for the Canadian Vehicle Survey

Sales of new Class 8 trucks are quite cyclical, as illustrated by Figure 12-4. The new Class 8 trucks sold every year are either for addition to a fleet or for replacement. In a period of growth, additions can be more important than replacements. In a period of downturn, however, even fleet replacements can be affected by the postponement of the decision to buy, or by the purchase of used trucks, which are newer than the ones in the fleet, from those pulling out of the industry.

FIGURE 12-4: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2000



Source: Canadian Vehicle Manufacturers' Association

When Canadian sales of Class 8 trucks in a given year are related to the number of registered Class 8 trucks, it gives an idea of the importance of the replacement rate of vehicles in the trucking industry (Table 12-8). Replacement rates vary from one region to another, a situation that would have to be analyzed at a micro-level to determine whether or not it is indicative of an appropriate or inappropriate rate of replacement. In Canada as a whole, more than 10 per cent of registered Class 8 trucks in operation in 1999 were new trucks.

Table 12-9 shows the replacement rate of Class 8 trucks by province/territory in 2000.

TABLE 12-9: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 2000

	Sales of Class 8	*Registered Class 8*	*Sales/ Registration (Per cent)*
Newfoundland	110	2,859	3.8
Prince Edward Island	46	2,576	1.8
Nova Scotia	543	7,396	7.3
New Brunswick	1,142	4,401	25.9
Quebec	5,749	32,437	17.7
Ontario	11,163	103,494	10.8
Manitoba	1,224	10,975	11.2
Saskatchewan	1,024	25,107	4.1
Alberta	4,345	65,056	6.7
British Columbia	2,559	14,038	18.2
Canada	**27,905**	**268,339**	**10.4**

Source: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey; Canadian Vehicle Manufacturers' Association

MARINE TRANSPORTATION

Marine freight traffic in Canada has three categories: domestic flows,[3] transborder trade with the United States, and "other" international (deep-sea or overseas) traffic.[4] Marine freight traffic totalled 334 million tonnes[5] in 1999, a 1.9 per cent increase from 1998. Domestic flows, or coasting trade, accounted for 52.9 million tonnes, 9.5 per cent more than the 48.3 million tonnes moved in 1998. Canadian-flag vessels carried 51.5 million tonnes, or 97 per cent, of this total, which left foreign ships handling just three per cent of Canada's domestic marine shipping activities in 1999.

Canada–US traffic totalled 101.9 million tonnes, a 1.8 per cent increase over 1998 volumes. Canadian-flag vessels were active in the transborder trade, carrying 56.2 million tonnes, or 55.2 per cent of the total traffic. Overseas traffic decreased by 0.1 per cent in 1999 to 179.2 million tonnes, with Canadian-flag vessels carrying only 0.1 per cent of this traffic.

Total marine flows between 1989 and 1999 fluctuated year to year but showed a slightly increasing trend overall. Domestic traffic flows declined from a high of 70 million tonnes in 1988 to 52.9 million tonnes in 1999, a 24 per cent decline. This decline was primarily due to a shift in grain traffic from Thunder Bay to West Coast ports. In 1999, transborder traffic between Canada and the United States exceeded the previous high recorded in 1998 by almost two per cent. Since 1988, transborder tonnage increased by 22 per cent. Overseas (other international) traffic grew eight per cent between 1988 and 1999. Overseas volumes were 0.1 per cent lower in 1999 than in 1998.

3 Maritime traffic that originates from and is destined to a Canadian port; flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, the same volumes get counted twice.

4 Traffic to and from foreign countries other than the United States.

5 Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).

Table 12-10 shows trends in Canada's marine traffic, by sector, from 1986 to 1999, while Table 12-11 shows the Canadian flag share of Canadian waterborne trade in 1999.

TABLE 12-10: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 – 1999

(Millions of tonnes)

	Domestic Flows	*Transborder*	*Overseas*	*Total Flows*	*Total Handled*
1986	60.5	68.2	138.4	267.1	327.6
1987	67.6	73.2	153.8	294.6	362.2
1988	70.0	83.8	166.2	320.0	390.0
1989	62.0	82.7	156.7	301.4	363.4
1990	60.4	76.2	156.1	292.7	353.1
1991	57.9	67.0	167.2	292.1	350.0
1992	52.3	67.9	155.3	275.5	327.8
1993	50.4	69.9	154.2	274.5	324.9
1994	52.2	78.8	168.1	299.1	351.3
1995	50.4	85.2	174.5	310.1	360.5
1996	48.8	88.5	171.4	308.7	357.5
1997	46.7	94.3	188.4	329.4	376.1
1998	48.3	100.1	179.4	327.8	376.1
1999	52.9	101.9	179.2	334.0	386.9

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

TABLE 12-11: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1999

(Millions of tonnes)

Canadian Waterborne Trade	*Canadian Flag*	*Per cent*	*US Flag*	*Per cent*	*Foreign Flag*	*Per cent*	*Total Traffic*
Domestic	51.5	97.4	0.0	0.0	1.3	2.5	52.9
Canada/US	56.2	55.2	8.3	8.1	37.4	36.7	101.9
Deep-Sea	0.3	0.1	0.1	0.1	178.8	99.8	179.2
Total	**108.0**	**32.3**	**8.4**	**2.5**	**217.5**	**65.1**	**334.0**

Source: Statistics Canada and Transport Canada

DOMESTIC FREIGHT TRAFFIC

Domestic cargo is loaded and unloaded at Canadian ports and therefore handled twice by the port system. Domestic cargo rose 9.5 per cent in 1999 to 105.8 million tonnes. A significant decline in woodpulp and canola shipments was offset by increased shipments of crude petroleum, pulpwood, logs, bolts, and stone and limestone. Domestic marine cargo has been steadily decreasing since its peak in 1988, when ports handled 139.9 million tonnes. This was due in part to a change in the direction of Canada's international trade. Throughout the 1980s, many commodities were carried as domestic cargo via the Great Lakes–St. Lawrence Seaway system and then transferred at Canada's eastern ports for shipment overseas. More and more, these commodities are now being carried by rail to Canada's western ports for shipment overseas.

Table 12-12 shows flows of domestic marine traffic by region in 1999.

TABLE 12-12: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1999

(Thousands of tonnes)

	----- *Region of Destination (Unloadings)* -----				
Region of Origin (Loadings)	*Atlantic*	*St. Lawrence*	*Great Lakes*	*Pacific*	*All Regions*
Atlantic	7,356	2,253	456	0	10,065
St. Lawrence	1,023	6,426	6,533	0	13,982
Great Lakes	327	5,329	8,439	0	14,095
Pacific	52	0	0	14,725	14,777
All Regions	**8,758**	**14,008**	**15,428**	**14,725**	**52,919**

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

Most domestic traffic is centred in the Great Lakes–St. Lawrence Seaway system. These ports handled 57.5 million tonnes (loadings and unloadings) in 1999, or 54.3 per cent of the total domestic tonnage. The Pacific region was the second busiest, handling 29.5 million tonnes, or 27.9 per cent of the total. The bulk of domestic cargo handled by Pacific ports (99.7 per cent) stayed within that region. Pacific coast ports handled 4.8 million tonnes more cargo in 1999 than in 1998. Atlantic region ports handled 18.8 million tonnes of domestic cargo in 1999, or 41 per cent more than in 1998. Crude petroleum shipments to the shore-based storage reservoir at Whiffenhead, Newfoundland, drove this increase as the oil field on the Grand Banks (Hibernia) increased its production.

COASTING TRADE ACT

The *Coasting Trade Act* of 1992 governs foreign-registered ship activity in Canada's domestic marine shipping. Under the Act, only Canadian-registered, duty-paid ships may transport passengers and cargoes, and conduct commercial marine-related activities in Canadian waters. In addition, only Canadian-registered, duty-paid ships may be involved in the exploration and exploitation of non-living natural resources on Canada's continental shelf. Waivers are granted to foreign-registered ships to enter Canada's coasting trade if no Canadian ship is available or capable of providing a particular service. Canada Customs and Revenue Agency, through its regional custom's offices, carries out the administration and collection of duties associated with obtaining a coasting trade licence. While involved in a coasting trade activity, a foreign ship is subject to duty, payable per month at the rate of 1/120th of 25 per cent of the declared fair market value of the foreign ship. In one exception, as of January 1998, in accordance with the Canada–US Free Trade Agreement, duty is not payable on US-registered ships. The Canadian Transportation Agency determines whether or not a Canadian-registered, duty-paid ship is available to perform a particular service. Enforcing the Act remains the responsibility of the Minister of Transport.

The most significant contributors to the increase in domestic traffic within Canada were petroleum products, with 22.0 per cent of the volume, and stone and limestone, with 22.4 per cent.

In 1999, the primary commodities handled in the domestic trade across Canada were:

- iron ore and concentrates (14.2 million tonnes, up 1.5 per cent from 1998)
- pulpwood and chips (14.1 million tonnes, up 13.9 per cent)
- fuel oil (9.9 million tonnes, up 1.7 per cent)
- stone and limestone (11.3 million tonnes, up 22.4 per cent)
- wheat (9.0 million tonnes, up 0.4 per cent)
- crude petroleum (5.8 million tonnes, up 169 per cent).

Together, these commodities accounted for 60.1 per cent of all domestic tonnage handled at Canadian ports in 1999.

In 1999, nearly 2.6 per cent of Canada's domestic marine traffic was handled by foreign-flag ships, up from 2.1 per cent in 1998.

Historically, foreign-flag vessels have accounted for less than two per cent of the total domestic traffic. During 2000, the Canada Customs and Revenue Agency received a total of 110 applications for a coasting trade licence, down slightly from the 117 received in 1999. Of these, four were denied, while another seven were withdrawn by the applicant. US-flagged ships made up the greatest proportion of the applications with 35.

In 2000, offshore oil and gas production and exploration remained an area of high activity, particularly on the East Coast. As in the previous year, there were a significant number of coasting trade applications related to this activity, including 26 for the use of foreign-registered tankers and 11 for seismic research. Applications for tug and barge combinations were next at 20, followed by passenger vessels, including cruises, at 14.

Table 12-13 indicates the actual tonnage and percentage of total cargo tonnage carried by foreign-registered ships involved in Canadian domestic shipping from 1988 to 1999.

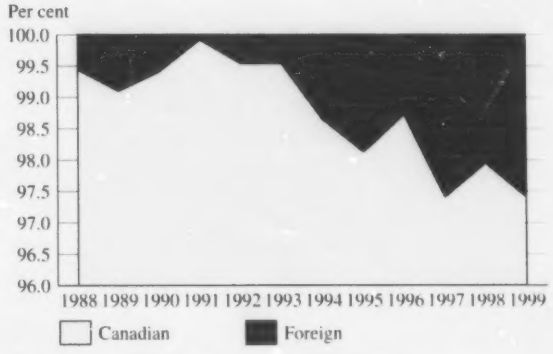
Figure 12-5 indicates the percentage of total cargo carried by foreign-registered ships involved in Canadian domestic shipping from 1988 to 1999.

TABLE 12-13: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 1999

Year	*Canadian*	*Per cent*	*Foreign*	*Per cent*	*Total*
1988	69,584,300	99.44	389,200	0.56	69,973,500
1989	61,455,700	99.10	560,100	0.90	62,015,800
1990	60,005,700	99.41	354,300	0.59	60,360,000
1991	57,862,300	99.92	48,400	0.08	57,910,700
1992	52,021,600	99.54	240,200	0.46	52,261,800
1993	49,744,300	99.54	231,300	0.46	49,975,600
1994	51,474,100	98.65	703,800	1.35	52,177,900
1995	49,552,400	98.13	945,400	1.87	50,497,800
1996	48,377,762	98.73	623,384	1.27	49,001,146
1997	45,431,820	97.41	1,208,017	2.59	46,639,837
1998	47,301,104	97.93	998,994	2.07	48,300,098
1999	51,549,488	97.41	1,369,314	2.59	52,918,802

Source: Transport Canada, from data supplied by Statistics Canada

FIGURE 12-5: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1999



Source: Transport Canada from data supplied by Statistics Canada

INTERNATIONAL FREIGHT TRAFFIC

In 1999, the volume of international cargo handled was 281.1 million tonnes, up 0.6 per cent from the quantity handled during 1998. Of all the international tonnage handled at Canadian ports, 63.9 per cent is export-oriented (including in-transit and re-export traffic). Canada's main deep-sea trading partners, excluding the United States, include Japan, China, South Korea, the United Kingdom and other western European nations. Combined, they accounted for over 61 per cent of total Canadian international marine traffic (exports and imports) in 1999.

The value of Canadian international marine trade in 1999 was around $83 billion (excluding shipments via US ports), or 4.5 per cent higher than in 1998. Marine imports were valued at $42.8 billion and exports at $40.2 billion. While the value of exports decreased by one per cent, imports increased by 10.3 per cent, due to increased cargoes inbound from western Europe and Asia.

Table 12-14 shows the value of the marine share of Canada's international trade in 1999.

TABLE 12-14: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1999

(Billions of dollars)

	Marine	*All Modes*	*Marine (Per cent)*
Transborder			
Exports[1]	6.9	308.1	2.2
Imports	2.8	215.4	1.3
Total US	9.8	523.5	1.9
Other Countries			
Exports[1]	33.2	46.8	70.9
Imports	40.0	104.7	38.2
Total other	73.2	151.5	48.3

1 Including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

Conference/Non-conference Market Shares

If it offers scheduled liner services, a shipping line can operate either as a member line of a shipping conference or as an independent (non-conference) line. Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic. As shown in Table 12-15, conference traffic was relatively static from 1994 to 1997, but was down somewhat in 1998. The Asia North America Eastbound Rate Agreement (ANERA) dissolved late in 1996. Several other conferences have been dissolved during 1999, including the Canada Westbound Rate Agreement (see Chapter 11 for further detail). The decline in conference power on many routes has resulted in independent lines increasing their market share substantially, particularly from 1998 on. If non-conference US origin/destination transshipped traffic is taken into account, the non-conference share would be even more dominant.[6]

TABLE 12-15: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 1999

(Millions of tonnes)

	1994	*1995*	*1996*	*1997*	*1998*	*1999*
Conference						
Exports	5.6	5.6	5.9	5.9	5.4	3.8
Imports	5.0	4.4	4.7	4.3	4.3	4.3
Total	10.6	10.0	10.6	10.2	9.7	8.1
Non-conference						
Exports	5.3	6.5	6.8	6.5	8.2	11.4
Imports	3.6	3.6	3.7	5.3	6.6	6.9
Total	8.9	10.0	10.5	11.8	14.8	18.3

Source: Statistics Canada, International Database; Transport Canada

As shown in Table 12-16, liner traffic by foreign region of origin/destination helps illustrate the relative shares of conference and non-conference operators on different routes. The drop in conference traffic in 1999 is due largely to the weakening of conference carryings in the Asian trades.

TABLE 12-16: LINER TRAFFIC BY REGION, 1999

(Millions of tonnes)

	Liner Imports		*Liner Exports*		
Region	*Conference*	*Non-conference*	*Conference*	*Non-conference*	*Total*
Europe	4.1	2.5	3.8	1.6	11.9
Asia	0.2	3.1	–	7.6	10.9
Central America	–	0.2	–	0.6	0.9
South America	–	0.3	–	0.4	0.7
North America	–	0.3	–	0.5	0.8
Middle East	–	0.2	–	0.3	0.5
Oceania	–	–	–	0.2	0.3
Africa	–	0.2	–	0.1	0.4
Total	**4.3**	**6.9**	**3.8**	**11.4**	**26.4**

Note: – means "Nil"

Source: Statistics Canada, International Database; Transport Canada

Marine Traffic by Commodity

As in past years, in terms of the type of cargo carried, conference operators tend to concentrate almost solely on containerized traffic, with eight million tonnes of the total of 8.1 million tonnes they carried moving in containers. Non-conference traffic is also characterized by an increasingly large percentage of cargo in containers (78 per cent), but includes significant amounts of general cargo and neo-bulk traffic as well.

Canada–US Transborder Freight Traffic

Spurred by both exports and imports, Canada's marine traffic with the United States increased by 22 per cent between 1988 and 1999. Transborder traffic reached a peak of 101.9 million tonnes in 1999, up 1.8 per cent from the year before. Exports (loadings to US destinations)[7] led the slight growth of 1.4 per cent in marine traffic between the two nations. Imports (unloadings) increased by 2.4 per cent to 42.2 million tonnes in 1999, compared with 41.2 million tonnes over the same period in 1998.

Table 12-17 shows Canada's maritime trade with the United States from 1986 to 1999.

6 It is important to note that the data in Tables 12-15 and 12-16 are not adjusted for US transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route that is likely most affected is that between Europe and Canada. The Port of Montreal estimates that around 50 per cent of its liner traffic originates in, or is destined for, the US. The Port of Halifax is also handling growing amounts of US Midwest traffic. This would, of course, affect the balance between conference/non-conference traffic further in favour of independent operators.

7 Including in-transit and transshipment cargo.

TABLE 12-17: CANADA'S MARITIME TRADE WITH THE US, 1986 – 1999

(Millions of tonnes)

	Loaded	*Unloaded*	*Total*
1986	36.8	31.4	68.2
1987	39.8	33.5	73.3
1988	47.0	36.8	83.8
1989	43.4	39.3	82.7
1990	43.1	33.2	76.3
1991	36.8	30.2	67.0
1992	35.9	32.0	67.9
1993	42.1	27.8	69.9
1994	49.5	29.3	78.8
1995	49.9	35.3	85.2
1996	52.4	36.1	88.5
1997	56.9	37.4	94.3
1998	58.9	41.2	100.1
1999	59.7	42.2	101.9

Source: Statistics Canada, Cat. 54-205

Fuelled by exports of $6.9 billion, marine traffic with the United States was valued at $9.8 billion in 1999. This value, however, represented only two per cent of total Canada–US trade, as the majority of the traffic was handled by surface transport modes, such as trucking and rail.

See Chapter 8 "Transportation and Trade" for more detailed information on Canada's trade with the United States.

EXPORTS

Loadings at Canadian ports destined for the United States totalled 59.7 million tonnes in 1999, up 1.4 per cent from 1998. Seven commodities accounted for 74 per cent of marine export volumes. These were (in million tonnes) crude petroleum (9.2), iron ore (8.4), gypsum (6.9), stone and limestone (6.5), fuel oil (5.4), gasoline (4.3) and salt (3.7).

In 1999, volumes of major commodities exported to the United States changed substantially from those exported in 1998. Gypsum exports jumped by 11 per cent and crude petroleum and stone and limestone increased by 6.8 and 8.6 per cent, respectively. In contrast, iron ore and salt exports decreased by 14.3 and 11.4 per cent, respectively.

There were two main trade flow corridors in 1999: the Canadian Atlantic to the US Atlantic route, with 27.5 million tonnes, or 46 per cent of total loadings to the US and from the Canadian Great Lakes to US Great Lakes ports, with 12.5 million tonnes, or 21 per cent of total loadings.

Table 12-18 details traffic flows from Canada to the United States in 1999.

TABLE 12-18: CANADA'S MARINE TRAFFIC TO THE US, 1999

(Millions of tonnes)

	US Region of Destination			
Canadian Region of Origin	*US Atlantic*	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	27.5	0.0	0.6	28.1
St. Lawrence	4.7	5.8	0.0	10.6
Great Lakes	0.1	12.5	0.0	12.6
Pacific	0.5	0.0	8.0	8.5
Total	**32.8**	**18.3**	**8.6**	**59.7**

Source: Statistics Canada, Cat. 54-205; Transport Canada

IMPORTS

Unloadings of shipments at Canadian ports originating in the United States rose from 41.2 million tonnes in 1998 to 42.2 million tonnes in 1999, a two per cent increase. Significant commodities, in terms of volume, included (in million tonnes) coal (18.6), iron ore (6.3), stone and limestone (3.0), fuel oil (2.1), corn (1.9), other petroleum products (1.7) and soybeans (1.5). Together, these seven commodities accounted for 83 per cent of all marine imports from the United States.

As with exports, there was considerable instability in the volumes of marine imports from the United States compared with 1998 volumes. Imports of corn and coal were up 64.1 and 4.9 per cent, respectively. Fuel oil showed a 12 per cent drop. Volumes of stone/limestone and iron ore decreased by 0.2 and 0.5 per cent, respectively.

The bulk of all marine imports from the United States, 77 per cent of the total volume, originated at ports on the Great Lakes. Ports along the US Atlantic and the Gulf of Mexico accounted for 16.6 per cent, with US Pacific ports making up the remaining 6.4 per cent.

Table 12-19 shows the traffic flow from the US to Canadian ports in 1999.

TABLE 12-19: CANADA'S MARINE TRAFFIC FROM THE US, 1999

(Millions of tonnes)

	US Region of Origin			
Canadian Region of Destination	*US Atlantic*	*US Great Lakes*	*US Pacific*	*Total*
Atlantic	2.9	0.1	0.0	3.0
St. Lawrence	3.5	4.3	0.4	8.2
Great Lakes	0.2	28.1	0.0	28.3
Pacific	0.4	0.0	2.3	2.7
Total	**7.0**	**32.5**	**2.7**	**42.2**

Source: Statistics Canada, Cat. 54-205; Transport Canada

OVERSEAS FREIGHT TRAFFIC

Canadian marine trade with overseas countries (excluding the United States) totalled 179.2 million tonnes in 1999, down 0.1 per cent from the 1998 total of 179.4 million tonnes. Over the last 10 years, this trade has been strongly export-oriented, with the loading share going back and forth between 67 and 79 per cent. The majority of total loadings to overseas countries (about 61 per cent) took place at West Coast ports, while 89 per cent of overseas imports were unloaded at Canada's East Coast ports.

Table 12-20 shows Canada's maritime overseas trade from 1986 to 1999.

TABLE 12-20: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1999

(Millions of tonnes)

	Loaded	*Unloaded*	*Total*
1986	107.8	30.6	138.4
1987	119.2	34.6	153.8
1988	124.1	42.1	166.2
1989	115.7	41.0	156.7
1990	116.0	40.1	156.1
1991	131.3	35.9	167.2
1992	118.0	37.3	155.3
1993	110.4	43.8	154.2
1994	120.5	47.6	168.1
1995	126.6	47.9	174.5
1996	121.9	49.5	171.4
1997	131.1	57.3	188.4
1998	120.2	59.2	179.4
1999	119.9	59.3	179.2

Source: Statistics Canada, Cat. 54-205; Transport Canada

In 1999, the Canadian marine trade with overseas countries (excluding the United States) was valued at $73.2 billion. Of this, exports made up an estimated $33.2 billion and imports $40.0 billion. Marine transport accounted for 48 per cent of all overseas trade and was the dominant mode for shipping overseas freight.

For more detailed information concerning Canada's offshore trade, see Chapter 8, "Transportation and Trade."

EXPORTS

Canadian marine loadings destined for non-US countries in 1999 generated 119.9 million tonnes of traffic, down 0.2 per cent from 1998 levels. The major commodities shipped from Canada were (in million tonnes) coal (31.7), iron ore (19.7), wheat (13.9), containerized freight (12.9), woodpulp (7.2), sulphur (5.4) and potash (4.3). Of outbound loadings, 11 per cent were containerized.

Some of the major commodities loaded in 1999 showed a significant decline over 1998. Coal shipments were down by 3.1 per cent, iron ore by 6.5 per cent, and wheat by 1.4 per cent. Containerized freight and sulphur volumes increased by 13.6 and 3.8 per cent, respectively.

Approximately 61 per cent of Canadian loadings for overseas destinations came from western Canadian ports in 1999, while ports along the St. Lawrence Seaway system handled most of the eastern share. Not surprisingly, the direction of trade was highly polarized, with the western ports dominating (69 per cent) the Asia and Oceania trade routes, and the Eastern ports handling 65 per cent of tonnage shipped to Europe.

Table 12-21 shows Canada's maritime traffic to overseas destinations in 1999.

TABLE 12-21: CANADA'S MARINE TRAFFIC TO OVERSEAS, 1999

(Millions of tonnes)

	Canadian Region of Origin		
Foreign Region of Destination	*Eastern ports*	*Western ports*	*Total*
Asia and Oceania	5.4	50.7	56.1
Europe	30.1	8.9	39.0
South and Central America	5.4	8.2	13.7
Middle East and Africa	5.6	5.6	11.2
Total	**46.6**	**73.3**	**119.9**

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

IMPORTS

Marine shipments from overseas origins unloaded at Canadian ports totalled 59.3 million tonnes in 1999, a 0.2 per cent increase over 1998. Crude petroleum [8] dominated imports at 28.4 million tonnes, or 48 per cent of all tonnage unloaded from offshore origins. Other major commodities unloaded included (in million tonnes) alumina and bauxite (5.2), containerized freight (9.0), iron and steel (3.2), fuel oil (1.8), coal (1.8) and gasoline (1.6). Of the inbound traffic, more than 15 per cent was containerized.

Eastern Canadian ports unloaded more than 89 per cent of inbound overseas shipments. Overseas cargo originated mainly in Europe and South and Central America.

Table 12-22 shows Canada's maritime traffic from overseas markets in 1999.

8 Including transshipment of North Sea crude petroleum

TABLE 12-22: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1999

(Millions of tonnes)

	Canadian Region of Destination		
Foreign Region of Origin	*Eastern ports*	*Western ports*	*Total*
Asia and Oceania	3.8	4.5	8.3
Europe	25.5	0.2	25.7
South and Central America	11.8	1.1	12.9
Middle East and Africa	11.7	0.8	12.5
Total	**52.8**	**6.5**	**59.3**

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

AIR TRANSPORTATION

AIR CARGO

The domestic transportation of cargo by air is deregulated, with no restrictions on routing, capacity or price. Air cargo is carried in the belly-hold of passenger aircraft, on combination passenger/cargo aircraft and on dedicated cargo aircraft. Transborder and international air cargo services are offered within a framework of bilateral air agreements, international agreements and national policies. Canada acquires the international rights for scheduled all-cargo air services through bilateral negotiations, and it is the Minister of Transport's prerogative to designate which Canadian operators will exercise those rights. Although no Canadian carriers are exercising such all-cargo rights at this time, Air Canada operates three so-called "combi" aircraft in which a part of the passenger deck is dedicated to cargo, providing service to Europe.

Canada's policies governing international all-cargo charter air services and the designation of Canadian air carriers for scheduled international all-cargo air services were most recently modified in 1998.

The integration of Air Canada's and Canadian Airlines International's schedules in 2000 resulted in a reduction in scheduled cargo capacity, causing some difficulties for specialized cargo shippers. This is because the airlines provide air cargo service mainly as a by-product of its passenger air services, using the portion of the belly-hold not required for passenger baggage. Air Canada's cargo revenue in 2000 made up only six per cent of its total revenue.

There are 33 air carriers licensed by the Canadian Transportation Agency to operate domestic service all-cargo aircraft. While the majority of these carriers operate with smaller, non-jet equipment, a small number of them have significant domestic and international all-cargo operations.[9] Canadian air carriers use their all-cargo licences to carry cargo for domestic and international courier companies, freight forwarders and consolidators, and to serve directly shippers.

Air NorTerra, which operates as Canadian North, and First Air frequently use combi aircraft to move significant amounts of air cargo northbound, including perishable goods, as part of their scheduled services. These large jet operators, along with numerous smaller operators, provide a vital transportation service in the North, where year-round alternative means of transportation is often unavailable. Preliminary data for cargo activity in the North indicate that large jet operators carried seven per cent less domestic cargo in 1999 compared with 1998. There are no data available on regional and local cargo carrier activity, as they are not required to file cargo data.

DOMESTIC SERVICES

On February 17, 2000, the federal government introduced Bill C-26 in response to the restructuring of Canada's airline industry. Under amendments made in Bill C-26, the Canadian Transportation Agency was given authority to review cargo rates on monopoly routes. (The Agency has similar authority over passenger fares. See Chapter 13 "Passenger Transportation" for details.)

Table 12-23 shows the volume of goods carried by Canadian air carriers on all-cargo air services, by sector, from 1993 to 1999. There was little change in the total tonnes of air cargo carried between 1998 and 1999. Domestic tonnes carried increased by three per cent to 501,000 tonnes, accounting for 61 per cent of the total

TABLE 12-23: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999

(Tonnes)

Year	*Domestic*	*Transborder*	*Other International*	*Total*
1993	422,147	68,238	163,108	653,493
1994	443,601	70,882	169,102	683,585
1995	416,171	87,663	183,743	687,577
1996	447,313	80,389	195,584	723,286
1997	513,719	77,387	222,452	813,558
1998	487,583	94,176	233,952	815,711
1999[1]	501,284	90,584	234,547	826,415

Note: For 1995 to 1999, Levels I-III carriers; for 1993 and 1994, Levels I-IV carriers.
1 Preliminary data for 1999.

Source: Statistics Canada, Cat. 51-206

9 Canadian carriers that have a significant all-cargo operation with large aircraft include: All Canada Express Ltd., Bradley Air Services Limited, ICC International Cargo Charters Canada Ltd., Kelowna Flightcraft Charter Ltd., Morningstar Air Express Inc., Royal Aviation Inc. and Winnport Logistics Ltd.

tonnes carried in 1999. During the same period, transborder air cargo tonnage decreased by four per cent, while international tonnes did not change significantly.

Table 12-24 shows the operating revenues generated by goods carried on Canadian air carriers on all-cargo services, by sector, from 1993 to 1999. Total cargo operating revenues increased by four per cent between 1998 and 1999. Domestic revenues increased by six per cent, to $806 million, in 1999, accounting for 70 per cent of total cargo operating revenues, while international revenues (including transborder) increased by one per cent.

TABLE 12-24: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999

(Millions of dollars)

Year	*Domestic*	*International*[1]	*Total*
1993	588.8	224.9	813.7
1994	562.7	296.4	859.1
1995	694.2	292.3	986.5
1996	655.3	350.5	1,005.7
1997	709.0	357.3	1,066.3
1998	762.0	347.7	1,109.7
1999[2]	806.4	350.5	1,156.9

1 Includes transborder and other international.
2 Preliminary data.

Source: Statistics Canada, Cat. 51-206

Canada–US Services

From 1993 to 1999, air cargo transport between Canada and the United States soared from $15.3 billion to $37.7 billion, for an annual average growth rate of 16 per cent. Air growth rate was larger than the average 12 per cent growth registered for total Canada–US trade over the same period. As a result, the air share of total Canada–US trade rose from 5.8 per cent in 1993 to 7.2 per cent in 1999.

The "electrical/electronic machinery and material" sector contributed to the growth in air transport between Canada and the United States from 1993 to 1999. During this period commodities recorded an average annual growth rate of 30 per cent in exports by air, rising from $0.9 billion to $4.6 billion. In imports, the average growth was 21 per cent rising from $2.2 billion to $6.9 billion over the period.

In 1999, commodities shipped by air to the United States totalled $17.5 billion. These included electrical/electronic machinery and material with $4.6 billion, other machinery and equipment with $3.9 billion, and a variety of manufactured goods (mainly transportation material and high-valued aircraft equipment) totalling $8.5 billion. Imports by air from the United States amounted to $20.2 billion. They included electrical/electronic material with $6.9 billion, machinery and equipment with $4.6 billion, chemical products with $1.5 billion, and various manufactured goods and end-products.

It should be noted that a significant portion of cargo moving on air waybills is actually trucked between Canada and the United States, but is recorded in trade data as air traffic. Many Canadian all-cargo operators also provide transborder cargo services under contract to the major courier companies.

Table 12-25 shows the evolution of the air share in Canada's trade with the United States and other countries from 1993 to 1999.

TABLE 12-25: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 – 1999

(Billions of dollars)

	Air Exports[1]	*Air Imports*	*Air Total*	*All Modes Total*	*Air Share (per cent)*
Canada/US					
1993	6.76	8.55	15.31	264.50	5.8
1995	9.80	12.97	22.77	358.43	6.4
1997	12.20	16.89	29.08	429.43	6.8
1999	17.52	20.18	37.70	523.50	7.2
Canada/Other countries					
1993	6.29	9.33	15.62	92.97	16.8
1995	8.41	14.58	23.00	129.38	17.8
1997	8.87	19.49	28.36	142.74	19.9
1999	9.75	24.38	34.13	151.55	22.5

1 Includes domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations for exports

Other International Services

From 1993 to 1999, air cargo transport between Canada and countries other than the United States was robust, growing at an annual average rate of 13.9 per cent, from $15.6 billion to $34.1 billion. This increased growth was largely fuelled by strong imports from Europe and Pacific Rim countries, with an average annual growth of 17.4 per cent. As a result, the air mode share rose from 17 per cent to over 22 per cent of total trade between Canada and overseas countries.

Main imports shipped by air from overseas countries included the "electrical/electronic machinery and material" group with $7.5 billion in 1999, other machinery and equipment with $5.4 billion, chemical products with $2.6 billion, and various manufactured goods (mainly transportation material such as high-valued aircraft equipment) totalling nearly $8 billion. The electronic machinery and material group registered the highest average annual growth, with a rate of 28 per cent over the

As for exports by air to countries other than the United States, their growth was only 7.6 per cent over the period. The currency crisis and recession that hit the Asian and Latin American economies in 1998 combined with a slow recovery in 1999, have affected Canadian exports to these countries.

Tables 12-26 and 12-27 show main origins/destinations for Canada's trade with countries other than the United States shipped by the air mode in 1999. Western European and Asian countries dominated air transport as origin/destination of shipments moved to/from Canada. Over 80 per cent of air transport trade with overseas countries involved eastern provinces, mainly Ontario and Quebec.

TABLE 12-26: TOTAL EXPORTS BY AIR TO COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF DESTINATION, 1999

(Millions of dollars)

	Province of Origin			
Destinations	*Eastern provinces*[1]	*Western provinces*	*Air Exports*	*Total (Per cent)*
Western Europe	**4,699.7**	**976.8**	**5,676.5**	**58.2**
UK	1,791.2	146.2	1,937.4	
France	717.6	57.3	774.8	
Germany	646.1	78.9	725.0	
Belgium	97.3	560.3	657.6	
Switzerland	297.0	23.8	320.8	
Other	1,150.6	110.4	1,261.0	
Pacific Rim	**1,799.2**	**591.9**	**2,391.1**	**24.5**
Hong Kong	367.7	143.3	511.0	
Japan	321.4	127.9	449.3	
Australia	235.2	71.0	306.2	
South Korea	233.6	51.5	285.1	
Taiwan	170.2	64.6	234.9	
Other	471.1	133.6	604.7	
Other countries	**1,456.2**	**228.8**	**1,685.0**	**17.3**
Total Exports by Air	**7,955.1**	**1,797.5**	**9,752.7**	**100.0**

1 Including domestic exports and re-exports; eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-202 and special tabulations

TABLE 12-27: TOTAL IMPORTS BY AIR FROM COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF ORIGIN, 1999

(Millions of dollars)

	Province of Clearance			
Origins	*Eastern provinces*[1]	*Western provinces*	*Total Air Imports*	*Total (Per cent)*
Western Europe	**10,855.1**	**1,063.8**	**11,918.9**	**48.9**
UK	2,790.5	342.8	3,133.3	
France	2,603.0	89.4	2,692.4	
Germany	1,698.0	176.3	1,874.3	
Italy	770.4	167.6	938.0	
Switzerland	724.4	31.2	755.6	
Ireland	629.2	24.6	653.8	
Other	1,639.7	231.8	1,871.5	
Pacific Rim	**7,550.6**	**1,278.7**	**8,829.3**	**36.2**
Japan	2,096.5	329.0	2,425.5	
Taiwan	1,173.5	151.9	1,325.4	
Malaysia	829.9	147.9	977.8	
South Korea	865.5	109.7	975.1	
People's Republic of China	716.0	123.2	839.3	
Philippines	559.5	54.2	613.7	
Other	1,309.7	362.7	1,672.5	
Other countries	**3,132.3**	**499.7**	**3,632.1**	**14.9**
Total Imports by Air	**21,538.0**	**2,842.2**	**24,380.2**	**100.0**

1 Eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-203 and special tabulations

CARGO TRANSSHIPMENT PROGRAM

To improve the use of Mirabel Airport, in 1982, the federal government introduced a program to allow the Canadian Transportation Agency to permit Canadian and foreign carriers to carry international cargo transshipments via Mirabel coming from and destined to points outside Canada. In-transit cargo may be stored in bond pending its transportation by air or other mode to its final destination. Carriers are not authorized to carry Canadian originating or destined cargo unless specifically licensed to do so pursuant to a bilateral air agreement, an arrangement or under Canadian charter regulations.

The program was expanded to include Hamilton and Windsor airports in Ontario in 1987 and 1993, respectively, and once again in 2000 to include Gander, Newfoundland.

PASSENGER TRANSPORTATION 13

Patronage of public transportation services in urban areas increased in 1999. In intercity passenger movements, with the exception of air transportation for long-haul journeys, commercial transportation traffic growth remained marginal.

Canadians rely on all modes of the transportation system — air, ship, rail and road, including passenger vehicles and scheduled urban and intercity transit — to get them where they need to go. This chapter looks at the number of passengers carried by each mode, and how far they travelled.

RAIL TRANSPORTATION

RAIL PASSENGER TRAFFIC

In 1999, rail passenger traffic rose by about three per cent to just over 4.1 million. VIA Rail carried almost 92 per cent of these passengers, while the four Class II carriers —Algoma Central Railway, BC Rail, Ontario Northland and the North Shore and Labrador Railway — carried the rest. (Class II carriers include those known variously as regional and shortline railways.) All railways contributed to the increase in traffic.

Passenger-kilometres increased by over nine per cent to 1.59 billion. Again, all five railways contributed to the growth, with VIA Rail's output increasing by 8.7 per cent and that of the Class II railways by 17 per cent.

Table 13-1 shows the relative increases in the number of passengers and passenger-kilometres.

Commuter rail services in Canada's three largest cities — Toronto, Montreal and Vancouver — show a 44 per cent growth in passenger traffic between 1994 and 1999. Vancouver's West Coast Express introduced new service at the end of 1995, which accounts for some of the growth; Agence métropolitaine de transport (AMT) also introduced new service in Montreal and saw its passenger count grow by over 100 per cent. GO Transit traffic in and around Toronto rose by 20 per cent over the same period. Table 13-2 shows the commuter passenger traffic for the three cities from 1994 to 1999.

TABLE 13-1: PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1999

Year	*VIA Rail*	*Class II*	*Total*
Passengers			
1994	3,586,000	441,622	4,027,622
1995	3,597,000	414,315	4,011,315
1996	3,666,000	323,405	3,989,405
1997	3,765,000	339,196	4,104,196
1998	3,646,000	334,280	3,980,280
1999	3,757,000	345,874	4,102,874
Passenger-kilometres			
1994	1,342,421,423	84,959,534	1,427,380,957
1995	1,382,568,118	84,417,430	1,466,985,548
1996	1,436,197,898	77,137,263	1,513,335,161
1997	1,423,479,252	91,113,448	1,514,592,700
1998	1,377,598,464	80,233,805	1,457,832,269
1999	1,498,300,000	93,978,663	1,592,278,663

Source: Statistics Canada, Cat. 52-216; Transport Canada

TABLE 13-2: COMMUTER RAIL PASSENGERS IN TORONTO, MONTREAL AND VANCOUVER, 1994 – 1999

Year	*Commuter rail passengers (000)*
1994	31,263
1995	29,559
1996	33,313
1997	37,091
1998	40,769
1999	43,914

Source: Transport Canada, GO Transit, AMT and West Coast Express

BUS TRANSPORTATION

INTERCITY BUS SERVICE

Although intercity bus services represent a small segment of the industry and generate a small share of the industry's operating revenues, they provide the bulk of long-distance bus transportation. This segment of the industry has two service categories, scheduled intercity carriers and charter carriers, with the latter also operating airport, sightseeing and tour services. Most of the larger carriers in these two types of bus operations provide both intercity and charter services.

Table 13-3 list Canada's scheduled carriers and the markets they served in 2000.

TABLE 13-3: CANADIAN SCHEDULED CARRIERS AND MARKETS SERVED, 2000

Carrier/Carrier Group	*Markets Served*
Laidlaw Carriers	
Greyhound	Ontario West; local service in British Columbia, Alberta and Ontario; International service
Grey Goose	Manitoba & Northwestern Ontario
Voyageur Colonial	Ottawa–Montreal; Eastern Ontario
Penetang-Midland Coach Lines	Toronto–Barrie–Collingwood (Ontario)
Laidlaw Motor Coach	Vancouver Island (British Columbia)
Red Arrow (Pacific Western)	Calgary–Edmonton–Fort McMurray (Alberta)
Saskatchewan Transportation	Saskatchewan
Ontario Northland	Toronto–North Bay–Sudbury–Timmins (Ontario)
Trentway-Wagar (Coach USA)	Niagara–Toronto–Montreal (Ontario and Quebec)
Orleans Express	Montreal–Quebec City–Gaspe (Quebec)
Les Autobus Maheux	Montreal–Abitibi/Témiscamingue (Quebec)
Sherbus	Montreal–Estrie (Quebec)
SMT/Acadian	Maritime Provinces
DRL	Nova Scotia and Newfoundland

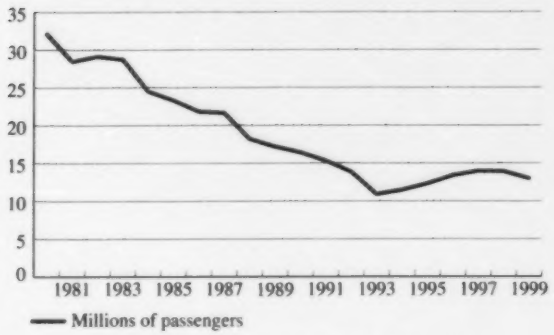
Note: The table is intended to be representative of the service available in each province/region, and is not a complete list of services.

Source: Official Canadian Bus Guide, November/December 1999, information provincial officials

SCHEDULED INTERCITY CARRIERS

The total number of passengers using scheduled intercity services provided by all industry segments (intercity carriers, charter carriers and school bus operators) has been in a fairly steady decline since the late 1970s, hitting a low of 10.8 million passengers in 1993. As shown in Figure 13-1, ridership in recent years has been fairly stable, ranging from 12 to 14 million passengers annually. Following modest increases in ridership between 1994 and 1998, the number of passengers decreased by almost 1 million in 1999 from the year before.

FIGURE 13-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

In 1999, 28 operators with annual revenues exceeding $200,000 reported total annual operating revenues of $106.5 million and operating expenses of $97.1 million. As Table 13-4 shows, approximately 62 per cent of the operating revenues of these operators came from scheduled intercity services, with charter and tour services contributing nine per cent, and parcel express 16 per cent.

TABLE 13-4: SUMMARY OF REVENUES FOR SCHEDULED INTERCITY OPERATORS, 1999

	Large Companies	*Small Companies*	*Total Intercity*	*Per cent of total*
Number of companies surveyed	13	15	28	
Operating Revenues	(Thousands of dollars)			
Scheduled Intercity Services	57,058	8,824	65,882	61.9
Urban Transit Services	2,242	0	2,242	2.1
Charter Services	7,492	1,829	9,321	8.8
School Bus Services (Home/school)	678	1,755	2,433	2.3
Other Passenger Bus Services	382	2,368	2,750	2.6
Sightseeing and Shuttle Services	347	0	347	0.3
Parcels and Delivery	16,566	0	16,566	15.6
Other Operating Revenues	5,270	1,353	6,624	6.2
Subsidies	0	324	324	0.3
Total Operating Revenues	**90,036**	**16,453**	**106,490**	**100.0**

Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

Using a service line revenue breakdown (Table 11-7), scheduled intercity revenues in 1999 were $235.8 million — $65.9 million by scheduled carriers, $26.9 million by charter carriers and $143.1 million by school bus operators.

CHARTER OPERATORS

Charter bus services are generally characterized by the rental of a bus to a person or group, where all passengers embark and disembark at the same point. Charter operators have the flexibility to offer a broad range of

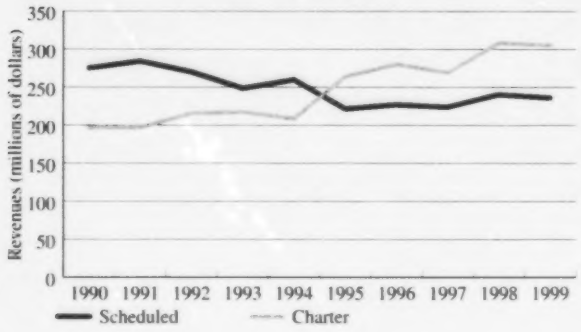
services, such as half-day school trips, three-week excursions, one-way trips and local sightseeing tours.

Charter bus companies earned almost two thirds of their revenues through charter services, as was the case for scheduled intercity operators, a significant portion of their revenues are also generated from other services, including eight per cent from intercity services and 19 per cent from other passenger services such as sightseeing, shuttle and tour services.

Figure 13-2 shows the changes in revenues generated from scheduled intercity service compared with charter service since 1990. There was a gradual increase in charter revenues between 1990 and 1994, followed by a more significant increase over the past five years. Scheduled intercity revenues gradually declined between 1990 and 1995, followed by a period of little change between 1995 and 1999.

FIGURE 13-2: SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 – 1999

(Based on service lines)



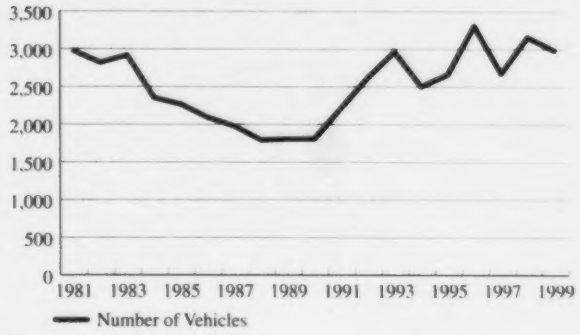
Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

Figure 13-3 shows the size of Canada's charter bus fleet from 1981 to 1999. The number of vehicles used in charter service peaked at 3,305 buses in 1996 and is now at approximately the same level as the early 1980s.

As the number of vehicles used in charter bus operations fluctuated during the 1990s, the utility or average annual use made of each vehicle steadily increased from a low of 40,000 kilometres in 1993 to almost 66,000 kilometres by 1999.

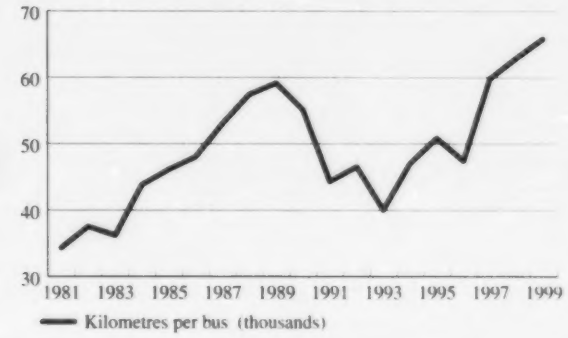
Figure 13-4 shows the utilization rate of the charter bus fleet from 1981 to 1999.

FIGURE 13-3: CHARTER BUS FLEET SIZE, 1981 – 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

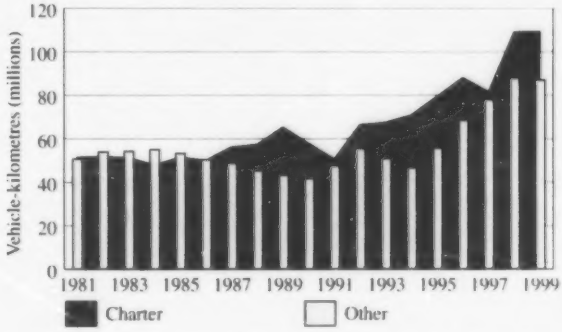
FIGURE 13-4: CHARTER BUS FLEET UTILIZATION, 1981 – 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

The expansion in charter service is also indicated by an increase in annual bus-kilometres. As shown in Figure 13-5, bus-kilometres have doubled to 196.3 billion kilometres since 1991.

FIGURE 13-5: CHARTER CARRIER BUS-KILOMETRES, 1981 – 1999



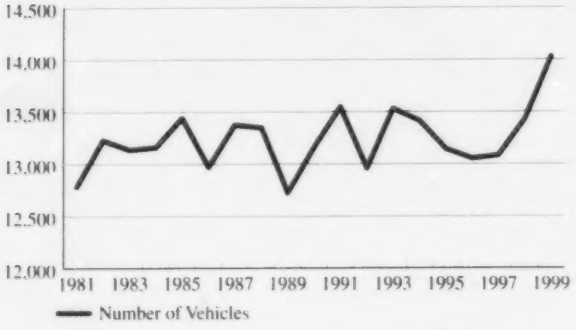
Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

URBAN TRANSIT

All major Canadian cities have some form of urban transit service. In terms of revenues, urban transit represents the largest component of Canada's bus industry. Excluding subsidies, transit companies accounted for 51 per cent of total bus industry revenues in 1999. Urban transit services are subsidized by both municipal and provincial governments, and transit revenues and subsidies combined accounted for 71 per cent of total bus revenues. Some transit operators also offer school bus and charter services, as well as services to travellers with disabilities.

The number of vehicles and the utilization rate remained fairly stable during the 1990s, with the number of vehicles in the 13,000 to 14,000 range and a utilization rate around 55,000 to 58,000 kilometres per vehicle. The number of vehicles in the urban transit fleet has increased seven per cent since 1997. Figure 13-6 shows the number of buses in Canada's urban fleet from 1981 to 1999.

FIGURE 13-6: URBAN TRANSIT FLEET SIZE, 1981 – 1999



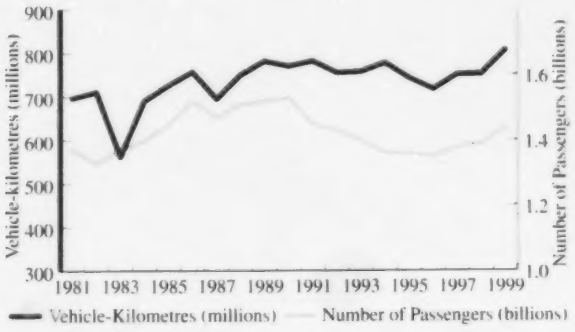
Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

The composition of the fleet has changed over the past five years, with significantly fewer standard motor coaches in operation. To make services more accessible, low-floor buses are being added to fleets in cities such as Vancouver, Calgary, Thunder Bay, Kitchener and Montreal. The number of these buses in operation has increased substantially over the past three years. Table 13-5 shows the make-up of Canada's urban transit fleet by category from 1991 to 1999.

After a period of decline in the early 1990s, the number of passengers using urban transit has remained fairly constant since 1994. In 1998, 1.41 billion passengers used urban transit, equalling the level attained in 1992. Ridership levels in 1998 were 2.3 per cent higher than in 1997.

Not surprisingly, with the size of the urban transit fleet remaining fairly stable during the 1990s, the total distance travelled was also relatively constant during this period at around 750 million kilometres. Over the past two years, however, there has been a modest increase in the distance travelled, to over 800 vehicle-kilometres in 1999, and in the number of passengers carried, to 1.4 billion. This is the highest level since the early 1990s. Figure 13-7 tracks the trend in urban transit by number of passengers and vehicle-kilometres from 1981 to 1999.

FIGURE 13-7: LONG-TERM TRENDS IN URBAN TRANSIT, 1981 – 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

TABLE 13-5: URBAN TRANSIT FLEET COMPOSITION, 1991 – 1999

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Number of carriers reporting	**65**	**74**	**74**	**84**	**80**	**77**	**65**	**62**	**66**
Standard motor bus	10,474	9,757	10,196	10,085	9,855	9,622	9,030	8,554	8,234
Low-floor bus		135	145	188	305	499	1,019	1,827	2,453
Trolley coach	332	358	308	344	304	319	322	315	304
Articulated bus	458	364	373	359	306	287	287	297	325
Light rail vehicle	527	500	547	547	548	520	520	520	520
Heavy rail vehicle	1,379	1,735	1,679	1,381	1,381	1,373	1,381	1,395	1,419
Commuter rail vehicle				331	359	359	336	346	505
Other	372	107	279	176	82	70	182	169	262
Total vehicles	**13,542**	**12,956**	**13,527**	**13,411**	**13,140**	**13,049**	**13,077**	**13,423**	**14,022**

Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

AUTOMOBILE TRANSPORTATION

In 1999, Transport Canada commissioned the Canadian Vehicle Survey to provide the first national estimates of the characteristics and use of motor vehicles. The survey sample is drawn from provincial and territorial motor vehicle registration files and encompasses all major types of on-road motor vehicles, including cars, light and heavy trucks, and buses. The survey got under way in 1999 and the first comprehensive numbers for all provinces and territories were produced for the fourth quarter of 1999. Annual estimates for 1999 were produced based on incomplete records from the first year. Table 13-6 presents the results of the car and light truck population (all vehicles less than 4,500 kilograms) and associated vehicle- and passenger-kilometres.

In 2000, 16.8 million cars and light trucks were registered, a slight increase over 1999. The distribution by province/territory falls more or less by population, with Ontario having the most light vehicles at 6.3 million, followed by Quebec with 3.8 million, British Columbia with 2.2 million and Alberta with nearly 2 million. Registrations per capita averaged about 540 light vehicles for every 1,000 persons, with little variation by province. The highest per capita ownership was found in the Yukon, Alberta and Saskatchewan, with rates in excess of 600 vehicles per 1,000 people. The lowest per capita ownership was found in Nunavut, the Northwest Territories and Newfoundland, with rates below 500 vehicles per 1,000 people.

Annual vehicle-kilometres for 1999 were estimated at about 285 billion. Ontario was the single largest jurisdiction, with over 100 billion vehicle-kilometres, or 37 per cent of the total. Quebec had about 60 billion vehicle-kilometres, or 21 per cent of the total, followed by Alberta and British Columbia each with about 13 per cent of the total. Average kilometres driven per registered car or light truck was about 17,000 nationally, with most jurisdictions clustered around this figure. Newfoundland and Alberta had the highest per-vehicle travel, each exceeding 20,000 per year, followed by New Brunswick at 19,000. With the exception of the territories, the rest of the provinces had per-vehicle travel between 14,000 and 18,000 kilometres per year.

Passenger-kilometres for light vehicles were estimated at 460 billion for 1999, with provincial/territorial breakdowns matching the vehicle-kilometres distribution. Average vehicle occupancy (the ratio of passenger-kilometres to vehicle-kilometres) varied between 1.6 and 2.0 persons per registered car or light truck.

MARINE TRANSPORTATION

CRUISE SHIP TRAFFIC

The Port of Vancouver recorded its 18th consecutive year of growth in 2000, passing the one million mark for the number of cruise passengers handled annually. In all, 28 vessels from 13 cruise lines made 333 sailings during the year, up from 309 in 1999.

In Halifax, port traffic also reached new heights, with 93 cruise ship calls and 138,000 passengers handled during the 2000 season. Many of these passenger trips originated in New York. Saint John was also a beneficiary of increased calls on this route from the northeastern United States, with over 101,000 passengers visiting during 2000.

TABLE 13-6: CAR AND LIGHT TRUCK STATISTICS, BY PROVINCE/TERRITORY, 1999 AND 2000

	Cars/light truck registrations (thousands)		*Registrations per 1,000 persons*		*Vehicle-kilometres (billions)*	*Passenger-kilometres (billions)*	*Average distance driven (thousands)*	*Average vehicle occupancy*
	1999	*2000*	*1999*	*2000*	*1999*	*1999*	*1999*	*1999*
Newfoundland	240	243	444	450	5	8	20.8	1.6
Prince Edward Island	71	73	513	523	1	2	14.2	2.0
Nova Scotia	499	513	532	545	8	14	16.0	1.8
New Brunswick	422	431	559	570	8	14	19.0	1.8
Quebec	3,844	3,835	523	520	60	101	15.6	1.7
Ontario	6,174	6,344	536	544	107	169	17.3	1.6
Manitoba	567	584	496	509	10	16	17.6	1.6
Saskatchewan	616	620	601	606	10	17	16.2	1.7
Alberta	1,878	1,926	635	643	38	59	20.2	1.6
British Columbia	2,186	2,221	543	547	36	60	16.5	1.7
Yukon	22	21	723	689	0.3	N/A	13.3	N/A
Northwest Territories	17	18	411	424	0.2	N/A	11.8	N/A
Nunavut	2	2	78	84	0.0	N/A	0.0	N/A
Canada	**16,538**	**16,832**	**542**	**547**	**284**	**460**	**17.1**	**1.6**

1 Vehicle-kilometres and passenger-kilometres for 1999 are estimated based on incomplete surveys from quarters 1-3.

Source: Canadian Vehicle Survey

The majority of these cruise passengers are US residents. The growth in the cruise ship industry reflects the aging of the baby boomer generation and the economic strength of the North American economy during 2000.

Marketing also plays an important role in the growth of the cruise industry, as can be seen in recent marketing initiatives. Most recently, for example, the New Brunswick Cruise Association was formed to encourage the development of the cruise industry in that province. The Association also represents New Brunswick's interests in the Atlantic Canada Cruise Association, formed in 1998. Another new marketing group is the St. Lawrence Cruise Association, which replaced the St. Lawrence International Cruise Committee. Yet another group marketing eastern Canada as a cruise destination is the New Atlantic Frontier, made up of about 30 ports in a loop from New York to Montreal that have pooled their marketing resources.

While cruise traffic was up at all ports from 1999 levels, the number of scheduled visits at Montreal and Quebec City, as well as at Atlantic Canada ports, was reduced by the bankruptcy of Premier Cruise Lines of Florida in September 2000 and the seizure of certain of their vessels for the non-payment of bills.

Table 13-7 shows the growth in international cruise ship traffic at major Canadian ports from 1990 to 2000.

TABLE 13-7: INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 2000

(Passengers)

Year	Vancouver	Montreal	Quebec City	Halifax	Saint John
1990	388,323	30,869	34,783	24,423	1,748
1991	423,928	47,047	51,363	43,512	3,402
1992	449,239	34,872	41,141	30,112	5,500
1993	519,942	30,626	38,642	30,917	12,379
1994	591,409	33,920	36,401	37,717	23,629
1995	596,744	27,384	38,981	30,257	12,226
1996	701,547	19,078	21,464	36,584	8,543
1997	816,537	29,324	36,569	44,328	19,813
1998	873,102	32,583	43,838	47,987	28,418
1999	947,659	18,306	34,628	107,837	40,000
2000	1,053,985	25,200	35,855	138,313	101,410

1 Preliminary

Source: Canada Port Authorities

Ferry Traffic

Traffic data for 2000 for all members of the Canadian Ferry Operators Association (CFOA) are not yet available. The 1999 traffic figures, however, provide a good indication of the size of the members' operations.

By far the largest operator in Canada (and celebrating its 40th anniversary), the British Columbia Ferry Corporation carried approximately 21.4 million passengers and 7.8 million vehicles in 1999. British Columbia's Ministry of Transportation and Highways inland ferry services carried a further 3.2 million passengers and 1.7 million vehicles. Another provincial service, La Société des traversiers du Québec, carried 5.6 million passengers and 2 million vehicles.

Marine Atlantic Inc., a federal Crown corporation, increased its traffic in 1999, carrying 477,761 passengers, 149,732 passenger vehicles and 76,905 commercial vehicles in its Gulf of St. Lawrence service between Newfoundland and Nova Scotia. The private ferry operators subsidized by the federal government also experienced an increase, carrying approximately 650,000 passengers, 300,000 passenger vehicles and 50,000 commercial vehicles in 1999. The remaining CFOA members accounted for approximately four million passengers and 1.8 million vehicle crossings.

AIR TRANSPORTATION

Federal Government Policy Initiatives

Industry Restructuring

On the domestic scene, the year 2000 was one of transition as the airline industry made significant changes to passenger services in response to Air Canada's acquisition of Canadian Airlines International Ltd. Bill C-26, which came into effect on July 5, 2000, included a number of elements focusing on the consumer. These included the following amendments to the *Canada Transportation Act:*

- expanded exit notice provisions whereby notice must now be given when 50 per cent or more of the passenger carrying capacity of all operators between two points is affected by the discontinuance of a service;
- the carrier giving notice is now required to provide an opportunity for officials of the affected communities to meet with them and discuss the impacts of the discontinuance;
- increased authority for the Canadian Transportation Agency to review all fares on monopoly routes;
- restoration of the Canadian Transportation Agency's ability to review the terms and conditions of carriage for domestic services; and

- new obligations for Air Canada to ensure customer service in both official languages on both its national and regional network, where numbers warrant as defined by the *Official Languages Act*, with phase-in periods for specific regions and services.

Bill C-26 also established the position of Air Travel Complaints Commissioner at the Canadian Transportation Agency. Mr. Bruce Hood was appointed as the first Commissioner on August 1, 2000, for a one-year period. The Commissioner, who may be appointed for an additional one-year term, has the role of reviewing and, where possible, mediating complaints that have not been resolved by the carrier to the satisfaction of the complainant. The Commissioner is required to issue a report on the consumer complaints handled by his office at six-month intervals. The report is required to set out the number and nature of complaints that were filed, including the airlines involved, how these complaints were dealt with, and any systemic problems noted. These reports will be incorporated into the Canadian Transportation Agency's annual report.

See Chapter 11 "Structure of the Transportation Industry" for more information on this legislation.

Monitoring

On August 1, 2000, the Minister of Transport appointed Ms. Debra Ward as his Independent Transition Observer on Airline Restructuring. Ms. Ward's mandate is to measure, over the course of the following 18 to 24 months, whether Bill C-26 is having the intended effects of promoting competition and satisfying the air transportation needs of Canadians. She is expected to examine the overall impact of airline restructuring on: consumers; urban, rural and remote communities; travel agents; airports; and airlines and their employees. She is to submit a report on her findings to the Minister of Transport at six-month intervals, with the first interim report expected in February 2001.

International Air Policy

Scheduled Air Services

As part of its approval of Air Canada's acquisition of Canadian Airlines, on December 21, 1999, the Government of Canada announced an amended framework for international scheduled air services. The framework took into account Air Canada's concerns stemming from the acquisition. These items included:

- suspension of the "use it or lose it" provision[1] in most international markets until the beginning of the 2001–2002 winter season, to allow Air Canada and Canadian Airlines time to reorganize their international air services;
- the allocation to Air Canada of all slots at New York's LaGuardia and Chicago's O'Hare airports, subject to the terms and conditions set out in the Minister's letter of March 10, 1995[2]; and
- a review of Canada's international air policy with a view to liberalization in the 2001–2002 winter season.

Appendix 13-1 includes a more detailed description of the amended framework.

Charter Air Services

On April 4, 2000, a new policy for international charter air services was announced, replacing the policy that had been in effect since 1978. The new policy removed fences (regulatory limits) attached to passenger charter air services, such as advance booking and minimum stay requirements, and eliminated restrictions on one-way travel. The new policy maintains a distinction between international charter services and scheduled air services to preserve the integrity of the international scheduled air services covered by Canada's bilateral air agreements.[3] Foreign operators are permitted to operate charter air services under the same conditions as Canadian operators. The policy also continues to protect the advance payments made by passengers to tour operators received by air carriers for charter air transportation.

The revised policy had the immediate effect of confirming the approach to charter air services being promoted by tour operators and other third-party sales agents. International charter activity, however, did not change significantly. Canada's travel patterns in this segment of travel are fairly stable, with a greater emphasis on transatlantic travel in the summer and southern destinations during the colder months.

Bilateral Initiatives

Canada's bilateral air agreements with other countries effective as of December 31, 2000, are listed in Table 13-8. Over the last year, Canada's two major

1 Under the "use it or lose it" provisions of Canada's international air policy, an airline has one year from the date of carrier selection to implement a new service or the designation becomes contestable. At year-end, the following destinations were open to be contested: Bulgaria, Dominican Republic, India (for transatlantic services), Indonesia, Ivory Coast, Malaysia, Pakistan, Peru, Philippines, St. Kitts and Nevis, and St. Lucia.

2 The slots were first obtained by the federal government during the 1995 air services negotiations for "Open Skies" with the United States, and were allocated to both Air Canada and Canadian Airlines by the Minister of Transport at that time.

3 Under Canadian charter regulations, the direct sale of charter seats to the public by an airline is prohibited. Normally, a tour operator or travel agency makes sales to the public.

carriers have been in a period of transition leading to integration. Air Canada has had to use Canadian Airlines' aircraft and crew on many international services. In some cases, the two companies were selling seats on each other's flights (cross code-sharing). The focus of Canada's bilateral air negotiations program has been to secure foreign government approval of Air Canada/ Canadian Airlines scheduled flights under various service scenarios and corporate transition plans.

TABLE 13-8: COUNTRIES/TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 2000

Antigua	El Salvador	Japan	Russia
Argentina	Fiji	Jordan	St. Kitts and Nevis
Australia	Finland	Lebanon	St. Lucia
Austria	France	Malaysia	Saudi Arabia
Bahamas	Germany	Mexico	Singapore[1]
Barbados	Greece	Morocco	South Korea
Belgium	Guatemala	Netherlands	Spain
Brazil	Haiti	Netherlands Antilles	Sweden
Bulgaria	Hong Kong	New Zealand	Switzerland
Cayman Islands	Hungary	Nicaragua	Thailand
Chile	Iceland[1]	Norway	Trinidad and Tobago
China	India	Pakistan	Turkey
Costa Rica	Indonesia	Panama	Ukraine
Cuba	Ireland	Peru	United Arab Emirates
Czech Republic	Israel[2]	Philippines	United Kingdom
Denmark	Italy	Poland	Venezuela
Dominican Republic	Ivory Coast	Portugal	
Egypt	Jamaica	Romania	

1. Services to Iceland and Singapore are being operated under memoranda of understanding that are in force.
2. Services to Israel are being operated under temporary arrangements.

Source: Transport Canada, Air Policy

On March 22, 2000, the Ministers of Transport and Foreign Affairs announced improved access for Canada's airlines to the Hong Kong market. Air Canada's right to use Canadian Airlines aircraft and crew and the rights for both airlines to market their services on each other's flights were also secured.

Under the new agreement with Hong Kong, airlines from Canada and Hong Kong are permitted to operate scheduled air services between Hong Kong and any Canadian city, with the flexibility to operate via intermediate countries and beyond each other's territory. The agreement also provides opportunities for new carriers on both sides to launch scheduled passenger and all-cargo air services between Canada and Hong Kong. In addition, the government secured Air Canada's right to initiate a daily air service between Toronto and Hong Kong, which began in May 2000.

On May 7, 2000, amendments to an agreement with Japan allowed Air Canada and Canadian Airlines to serve Japan both as distinct brands and jointly, while Air Canada dealt with the transition issues involved in its acquisition and integration of Canadian Airlines. As a result, Air Canada and Canadian Airlines were able to jointly market each other's flights, including Air Canada's new Toronto–Tokyo daily service. Among the code-sharing provisions included in the new agreement, Canadian air carriers can now market their services to Japanese cities beyond the traditional Japanese gateway airports through code-sharing with Japanese air carriers. Japanese air carriers received reciprocal rights.

New flexible code-sharing regimes were also concluded with Australia and New Zealand. In addition, a new agreement with Austria will facilitate new direct flights by Austrian Airlines to Toronto beginning in the spring of 2001.

Domestic Services and Traffic

Air Canada's domestic service levels and patterns changed during 2000, reflecting the integration of Canadian Airlines' services into its own schedule. In addition, other carriers introduced a number of new air services to the Canadian public throughout 2000. Carriers such as WestJet, Canada 3000 and Royal Aviation all increased the routes they served and announced several new plane orders to further expand services. A new carrier, CanJet, entered Canada's eastern market, while small carriers like Hawkair and Peace Air expanded in the west. New entrants Roots Air and London Air announced plans to begin scheduled service operations early in 2001.

On April 3, 2000, Air Canada and Canadian Airlines, along with their wholly owned subsidiaries and commercial partners, began operating an integrated, non-competing route schedule. The redesigned schedule eliminated previously duplicated departure times, allowing Air Canada and Canadian Airlines to re-deploy their aircraft fleet in an effort to capture operating synergies and better match market demand. As a result, the domestic summer seating capacity in the combined schedule was reduced by approximately 15 per cent compared with the same period in 1999. Air Canada's domestic winter 2000–2001 seating capacity was four per cent lower as compared with that for 1999–2000.

Pursuant to the commitment made to the Minister of Transport, Air Canada agreed to continue to serve all communities that were being served in December 1999 by Air Canada, Canadian Airlines International Ltd. or any of their wholly owned subsidiaries. With confirmation in August that Canadian Regional Airlines Ltd. would remain with Air Canada, points served by that regional operator were also subject to this service commitment. In total, 68 communities across the country, in all provinces and

territories, were affected by the commitment, which was made enforceable as part of the airline restructuring legislation, Bill C-26. Table 13-9 lists the communities affected. At year-end, Air Canada was fully complying with the service commitments.

TABLE 13-9: AIR CANADA DOMESTIC AIR SERVICE COMMITMENTS

Yukon (1 point)	Whitehorse	Ontario (cont'd)	North Bay
Northwest Territories (3 points)	Fort Smith		Ottawa
	Hay River		Sarnia
	Yellowknife		Sault Ste. Marie
British Columbia (16 points)	Castlegar		Sudbury
	Cranbrook		Thunder Bay
	Fort Nelson		Timmins
	Fort St. John		Toronto/CityCentre
	Kamloops		Toronto/Pearson
	Kelowna		Windsor
	Penticton	**Quebec (10 points)**	Bagotville
	Prince George		Baie Comeau
	Prince Rupert		Gaspe
	Quesnel		Îles-De-La-Madeleine
	Sandspit		Mont Joli
	Smithers		Montreal
	Terrace		Quebec City
	Vancouver		Rouyn-Noranda
	Victoria		Sept-Îles
	Williams Lake		Val D'Or
Alberta (8 points)	Calgary	**New Brunswick (5 points)**	Bathurst
	Edmonton		Fredericton
	Fort McMurray		Moncton
	Grande Prairie		Saint John
	High Level		St. Leonard
	Lethbridge	**Prince Edward Island (1 point)**	Charlottetown
	Peace River		
	Rainbow Lake	**Nova Scotia (3 points)**	Halifax
Saskatchewan (2 points)	Regina		Yarmouth
	Saskatoon		Sydney
Manitoba (2 points)	Thompson	**Newfoundland (5 points)**	Deer Lake
	Winnipeg		Gander
Ontario (12 points)			Goose Bay
	Kingston		St. John's
	London		Wabush

Source: Transport Canada, Air Policy

Several new domestic routes were started in 2000. As part of its new schedule, Air Canada offered a total of 10 new routes. Other airlines were active as well. WestJet continued to add services in western Canada and it expanded east by gradually adding Hamilton, Moncton and Ottawa before summer. In September, CanJet gradually introduced services to seven points across eastern Canada (service to Windsor was subsequently suspended). Canada 3000 and Royal Aviation also expanded significantly. These airlines and Air Transat now serve some 21 Canadian cities and provide increasingly effective domestic competition to Air Canada. Table 13-10 shows the new routes introduced in 2000.

TABLE 13-10: NEW DIRECT NON-STOP DOMESTIC SCHEDULED AIR SERVICES IN 2000

City Pair		*Daily Service*	*Airline*
Charlottetown	Montreal	1	Air Canada/Air Nova
Edmonton	Montreal	1	Air Canada
Halifax	St. John's	2	CanJet
Halifax	Montreal	2	CanJet
Halifax	Ottawa	3	CanJet
Halifax	Montreal	1	Royal
Halifax	Vancouver	1	Air Canada
Halifax	Quebec City	1	Air Canada/Air Nova
Halifax	Ottawa	1	Royal
Halifax	Stephenville	2	Air Canada/Air Nova
Hamilton	Winnipeg	3	WestJet
Hamilton	Thunder Bay	2	WestJet
Hamilton	Ottawa	3	WestJet
Hamilton	Moncton	1	WestJet
Kelowna	Toronto	1	Air Canada
Montreal	London	1	Air Canada/Air Ontario
Montreal	Ottawa	2	CanJet
Montreal	St. John's	1	Air Canada/Air Nova
Montreal	Toronto	2	CanJet
Montreal	Windsor	1	Air Canada/Air Ontario
Ottawa	Toronto	3	CanJet
Ottawa	Toronto	5	Royal
Ottawa	Windsor	3	Air Canada/Air Ontario
Terrace	Vancouver	2	Hawkair
Toronto	Winnipeg	2	CanJet
Toronto	Vancouver	1	Royal

Source: Official Airline Guide

Air Canada's subsidiary, Air Nova, as well as the other regional and local air service operators serving Quebec and Atlantic Canada, moved to provide air services to communities that had been served by Inter-Canadien before it suspended operations in November 1999. Inter-Canadien never resumed service and subsequently terminated its business in May 2000. Air Labrador began scheduled air services in May to Charlo and Chatham/Miramichi, two New Brunswick communities left without air service when Inter-Canadien stopped operating. The communities received daily service to both Quebec City and Moncton. Unfortunately, the traffic loads were disappointing and by year-end, Air Labrador was signalling its intention to withdraw from these markets.

In April, Air Nova expanded frequencies on a number of routes within Quebec, including a new service between Quebec City and Baie-Comeau. At year-end, however, the airline announced that it was planning to discontinue this service due to a disappointing market response. Other local service operators also attempted to expand during the year but without success. Air Montreal ceased operations in May 2000 and Régionnair was operating under bankruptcy protection.

By comparison, air services within Ontario expanded. CanJet, Royal Aviation and WestJet introduced or increased services in Hamilton, Ottawa and Toronto. As was the case across its entire network, Air Canada realigned its regional air services as a result of its acquisition of Canadian Airlines and eliminated many duplicate flights.

In the Prairies, air services continued to increase, mainly as a result of the addition of frequencies by WestJet. Scheduled services operated by Calm Air, formerly a regional affiliate of Canadian Airlines, were integrated within Air Canada's schedule in October. Restructuring had little effect on Calm Air's services in Manitoba and northern Ontario because Air Canada did not have a strong regional presence in the market before 2000.

Regional services provided within British Columbia were reduced as a result of Air Canada's realigned schedule, but these decreases were partially offset by expanded WestJet service. During the year, Hawkair (Terrace–Vancouver) and Peace Air (Prince George, Fort Nelson and Fort St. John) added new regional services in competition with Air Canada.

TABLE 13-12: NATIONAL AIRPORTS SYSTEM (NAS) NUMBER OF DOMESTIC MARKETS SERVED INCLUDING CHARTERS AS OF DECEMBER 2000

	Number of Markets with Non-stop Flights			
Airport	*NAS Airports*	*Non-NAS Airports*	*Total*	*Number of Airlines*[1]
Calgary	13	9	22	4
Charlottetown	2	0	2	1
Edmonton	11	8	19	5
Fredericton	6	0	6	1
Gander	2	1	3	3
Halifax	11	6	17	4
Iqualuit	1	11	12	4
Kelowna	5	1	6	2
London	3	2	5	1
Moncton	5	1	6	3
Montreal/Dorval[2]	13	15	28	8
Ottawa	13	6	19	9
Prince George	3	3	6	2
Quebec City	4	9	13	2
Regina	6	1	7	3
Saint John	4	0	4	1
St. John's	4	4	8	6
Saskatoon	6	4	10	3
Thunder Bay	4	9	13	4
Toronto	20	7	27	5
Vancouver	13	20	33	9
Victoria	6	0	6	3
Whitehorse	1	2	3	3
Winnipeg	9	20	29	11
Yellowknife	1	18	19	7

1 Regional airlines are counted as an airline only if they do not code-share with a major airline.
2 There are no domestic services to Montreal/Mirabel.

Source: Official Airline Guide and airline timetables

TABLE 13-11: COMPETITION IN DOMESTIC AIR MARKETS AS OF AUGUST, 2000

				Capacity Market Shares (per cent)				
Rank	*Market*[1]	*Daily Seats 2000*[2]	*Per cent change over 1999*	*Air Canada*[3]	*WestJet*	*Royal*	*Canada 3000*	*Air Transat*	*Others*
1	Montreal-Toronto	4,799	(4)	79	0	11	4	7	0
2	Toronto-Vancouver	4,365	(3)	83	0	5	5	7	0
3	Calgary-Vancouver	3,375	(16)	69	27	1	4	0	0
4	Calgary-Toronto	2,943	(7)	85	0	3	7	5	0
5	Ottawa-Toronto	2,782	(7)	93	0	7	0	0	0
6	Halifax-Toronto	2,373	9	76	0	9	10	5	0
7	Calgary-Edmonton	2,156	(8)	69	31	0	0	0	0
8	Toronto-Winnipeg	1,778	(4)	75	0	13	8	4	0
9	Vancouver-Victoria	1,618	3	87	0	0	0	0	13
10	Edmonton-Vancouver	1,588	3	61	31	2	6	0	0
11	Edmonton-Toronto	1,356	(15)	87	0	5	5	3	0
12	Calgary-Winnipeg	910	(13)	47	53	0	0	0	0
13	Kelowna-Vancouver	849	(5)	46	54	0	0	0	0
14	Halifax-Montreal	774	13	80	0	20	0	0	0
15	Vancouver-Winnipeg	745	8	70	0	5	16	9	0
16	Montreal-Vancouver	705	19	87	0	0	5	8	0
17	St. John's-Toronto	673	64	78	0	3	11	9	0
18	Prince George-Vancouver	649	(20)	64	36	0	0	0	0
19	Calgary-Regina	619	(5)	60	40	0	0	0	0
20	Calgary-Kelowna	608	(2)	50	50	0	0	0	0
21	Halifax-St. John's	607	(27)	92	0	0	8	0	0
22	Thunder Bay-Toronto	606	(6)	100	0	0	0	0	0
23	Ottawa-Vancouver	601	(7)	94	0	0	6	0	0
24	Calgary-Saskatoon	599	(5)	54	46	0	0	0	0
25	Montreal-Quebec City	571	(28)	92	0	0	0	0	8

1 The top 25 markets are ranked on the number of daily seats.
2 The number of daily seats is defined as the average number of seats offered on non-stop flights in each direction.
3 Data for Air Canada includes the number of seats operated by Canadian Airlines and regional code-share partners.

Source: Official Airline Guide and airline timetables

Air NorTerra, doing business as Canadian North, ceased operating under the Canadian Airlines designator in October and began operating under its own code. Air Canada maintained its presence in the Western Arctic by sharing its code with NWT Air, an affiliate of First Air. First Air operates under its own designator in the Eastern Arctic. In general, services to, from and within Northern Canada were not affected by the airline restructuring process in 2000.

Table 13-11 summarizes the levels of competition in terms of seats offered. This table confirms the domestic market dominance of Air Canada and its affiliates, which operated 77 per cent of the available domestic seating capacity in the top 25 domestic markets.

Table 13-12 shows the number of non-stop links to airports in the National Airports System (NAS). The number of links depends on the amount of traffic generated and the airport's role as a gateway to remote communities (e.g. Yellowknife, Winnipeg, Edmonton). Table 13-13 summarizes the growth of domestic air travel over the past 10 years. Preliminary airport statistics suggest a moderate decrease of less than one per cent for 2000. Figure 13-8 presents domestic market shares at the NAS airports, measured in terms of capacity offered. In addition, Figure 13-9 summarizes the regional distribution of passenger traffic.

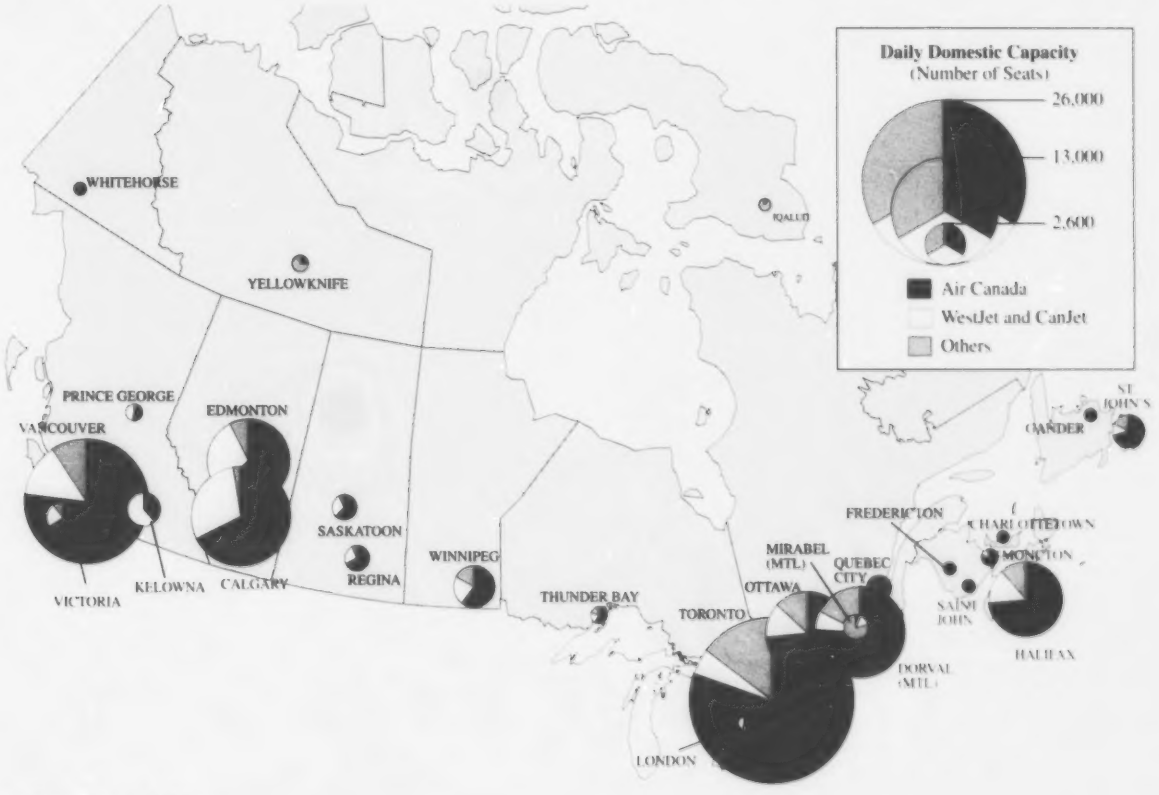
TABLE 13-13: DOMESTIC PASSENGER TRAFFIC, 1988 – 1999

Year	*Thousands*	*Per cent change*
1988	23,338	–
1989	22,784	(2.4)
1990	22,784	0.0
1991	20,463	(10.2)
1992	20,500	0.2
1993	19,676	(4.0)
1994	19,902	1.1
1995	20,889	5.0
1996	23,371	11.9
1997	25,241	8.0
1998	25,972	2.9
1999	26,701	2.8

Note: Passenger traffic is based on enplaned and deplaned passengers but has been divided by two to avoid the double counting of passengers.

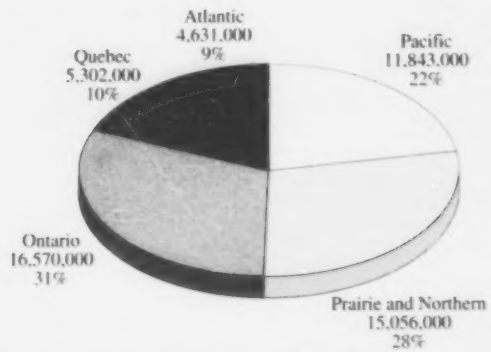
Source: Statistics Canada

FIGURE 13-8: DOMESTIC MARKET SHARE AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, DECEMBER 2000



Source: Transport Canada, Air Policy

FIGURE 13-9: DOMESTIC PASSENGER TRAFFIC BY REGION, 1999



Note: Enplaned and deplaned passengers (passengers double-counted).

Source: Aviation Statistics Centre, Statistics Canada, Statements 2,4 and 6.

CANADA–US TRANSBORDER SERVICES AND TRAFFIC

The transborder market continued to grow in 1999, nearly reaching the milestone of 20 million passengers. Preliminary airport statistics indicate that this milestone will be reached in 2000 with an estimated six per cent increase. Table 13-14 shows that 22 new transborder routes were established in 2000.

TABLE 13-14: NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 2000

	Route	*Airline*
Edmonton	Los Angeles	Air Canada/Canadian
Montreal	Boston	American Airlines/American Eagle
Montreal	Denver	Air Canada
Montreal	Philadelphia	Air Canada
Toronto	Akron	Air Canada/Air Georgian
Toronto	Albany	Air Canada/Air Georgian
Toronto	Austin	Air Canada
Toronto	Boston	American Airlines/American Eagle
Toronto	Dayton	Air Canada/Air Georgian
Toronto	Denver	United Airlines
Toronto	Detroit	Air Canada/Canadian Regional
Toronto	Fort Wayne	Air Canada/Air Georgian
Toronto	Grand Rapids	Air Canada/Air Georgian
Toronto	Los Angeles	American Airlines
Toronto	Louisville	Air Canada/Air Georgian
Toronto	Manchester	Air Canada/Air Georgian
Toronto	New York/Kennedy	Delta Air Lines/Atlantic Southeast
Toronto	Phoenix	America West
Vancouver	Denver	Air Canada
Vancouver	New York/Kennedy	Air Canada
Vancouver	Spokane	Air Canada/Central Mountain Air
Vancouver	Washington/Dulles	Air Canada

Source: Transport Canada, Air Policy.

Table 13-15 summarizes the growth of transborder passenger traffic between 1991 and 1999. In the four-year period between the signing of the "Open Skies" Agreement in February 1995 and 1999, Canadian operators have assumed an equal share of the transborder market. During the same period, however, the US industry has carried 26 per cent more traffic. These data confirm that while the overall size of the market has grown, this has not been achieved at the expense of the air carriers of one country over the other.

TABLE 13-15: CANADA–US AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999

	Canadian Carriers		US Carriers		All Carriers	
Period	*Passengers (thousands)*	*Market share (Per cent)*	*Passengers (thousands)*	*Market share (Per cent)*	*Passengers (thousands)*	*Annual change (Per cent)*
1991	5,182	42.3	7,057	57.7	12,239	--
1992	5,619	42.2	7,688	57.8	13,307	3.6
1993	5,634	40.9	8,146	59.1	13,780	3.6
1994	5,908	43.3	7,735	56.7	13,643	(1.0)
1995	6,482	43.7	8,367	56.3	14,849	8.8
1996	7,850	45.7	9,317	54.3	17,167	15.6
1997	8,883	49.5	9,089	50.5	17,952	4.6
1998	9,490	50.6	9,266	49.4	18,756	4.5
1999	9,903	50.4	9,759	49.6	19,662	4.8

Note: Excludes passengers carried by non-Canadian and non-US carriers.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6, and Transport Canada.

Table 13-16 summarizes the number of US airports served from each of the NAS airports. It is important to note that this table includes the services offered by Canada's charter airlines. Appendix 13-3 lists the transborder services operated at the end of 2000.

TABLE 13-16: NUMBER OF US AIRPORTS SERVED BY NAS AIRPORTS (SCHEDULED NON-STOP ONLY) AS OF DECEMBER 31, 2000

	Number of US Airports	*Number of Airlines*	
		Canada	*US*
Calgary	14	3	6
Edmonton	9	3	2
Halifax	3	1	2
Kelowna	1	0	1
London	1	0	1
Montreal/Dorval	24	1	5
Montreal/Mirabel	2	3	0
Ottawa	10	1	5
Quebec City	3	1	2
Regina	1	0	1
Saskatoon	1	0	1
Thunder Bay	1	0	1
Toronto	57	4	9
Vancouver	23	5	8
Victoria	3	1	1
Whitehorse	1	1	0
Winnipeg	5	2	1

Notes:
Includes only airports with scheduled transborder service.
Regional airlines are counted as an airline only if they do not code-share with a major airline.
Includes seasonal services.

Source: Official Airline Guide and airline timetables.

INTERNATIONAL SERVICES AND TRAFFIC

Under the amended framework for Canada's international air services that was announced on December 21, 1999, the Minister of Transport made the following designations:

Effective Date	*Operator*	*Country Market*
February 16, 2000	Air Transat	United Kingdom and Germany
February 16, 2000	Canada 3000 Airlines	United Kingdom and Germany
February 16, 2000	Air Canada	Mexico
April 27, 2000	Canada 3000 Airlines	France
April 27, 2000	Royal Aviation	United Kingdom and France
October 17, 2000	Canada 3000 Airlines	India

In the case of the United Kingdom and France, both Canada 3000 and Royal Aviation had requested to be designated, and their requests were accommodated because Canada's air markets for both of these markets exceeded the 300,000-passenger threshold and the bilateral rights were available. Canada 3000 is now permitted to provide air service between Paris and Moncton, Montreal and Toronto. Royal Aviation can now provide seasonal service between Canada (Calgary, Edmonton, Montreal, Toronto and Winnipeg) and the United Kingdom (Birmingham, Bristol, Glasgow, London and Manchester), and seasonal air service between Paris and Montreal and Toronto. Canada 3000 plans on introducing Canada–India service in 2001.

Up until its integration into Air Canada, Canadian Airlines continued to operate daily Vancouver–Hong Kong scheduled air service in its own name. Service to Thailand, however, was suspended on January 25, 2000. All of Canadian Airlines' international services were fully integrated into Air Canada's schedule in October.

In December 1999, Air Canada and Canadian Airlines agreed to the transfer of authorities that permitted the reinstitution of daily non-stop Toronto–Tokyo services. Air Canada had then indicated its intention to use dormant authorities for several other international routes. All of the changes that are planned by Air Canada are subject to the successful negotiation of the necessary route rights with other countries.

Air Canada launched numerous new services in 2000, including flights between Toronto and Narita, Hong Kong, Munich and Amsterdam; Vancouver and Shanghai; and Calgary and Honolulu (winter only). In addition, its Vancouver–Honolulu service was extended to Sydney. Air Canada used the designation it received in February to begin a Toronto–Mexico City route using its own aircraft.

In 2000, Canada and Iceland signed a Memorandum of Understanding authorizing Icelandair to increase air service between Iceland and Halifax to four flights per week from the current three. The agreement was signed too late in the year, however, and Icelandair was unable to implement the increase in 2000.

The number of international passengers grew by four per cent in 1999, with most of the growth in the Atlantic and southern markets. Moderate growth was expected in 2000 and preliminary airport statistics show a seven per cent increase in international passenger traffic. Table 13-17 provides more details on international passenger traffic. In addition, Figure 13-10 compares the changes in passenger air traffic by sector since 1987 and Figure 13-11 shows the distribution of traffic by sector for airports in the National Airports System (NAS).

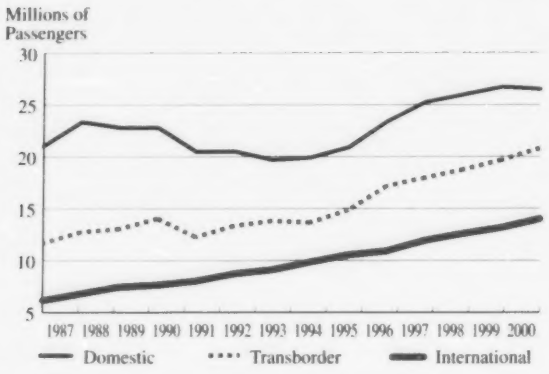
TABLE 13-17: CANADA–INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999

(Millions of passengers)

Period	*Atlantic*	*Pacific*	*Southern*	*Total*
1991	4.776	1.000	2.222	7.998
1992	5.221	1.140	2.353	8.714
1993	5.345	1.288	2.444	9.077
1994	5.802	1.478	2.560	9.840
1995	6.147	1.760	2.614	10.521
1996	6.413	1.920	2.574	10.907
1997	6.699	2.304	2.905	11.908
1998	7.112	2.312	3.159	12.582
1999	7.390	2.418	3.330	13.138
		(Per cent change)		
1991–92	9.3	14.0	5.9	9.0
1992–93	2.4	13.0	3.9	4.2
1993–94	8.6	14.8	3.9	8.2
1994–95	6.0	19.1	3.0	7.2
1995–96	4.3	9.1	(1.5)	3.7
1996–97	4.5	20.0	12.9	9.2
1997–98	6.2	0.3	8.7	5.7
1998–99	3.9	4.6	5.4	4.4

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4, and 6, and Transport Canada

FIGURE 13-10: AIR PASSENGERS BY SECTOR, 1987 – 2000



Source: Aviation Statistics Centre, Statistics Canada, Statements 2.4 and 6

Table 13-18 shows the number of international destinations served from airports in the National Airports System by scheduled airlines. The bulk of international services are concentrated in Canada's three largest cities: Montreal, Toronto and Vancouver.

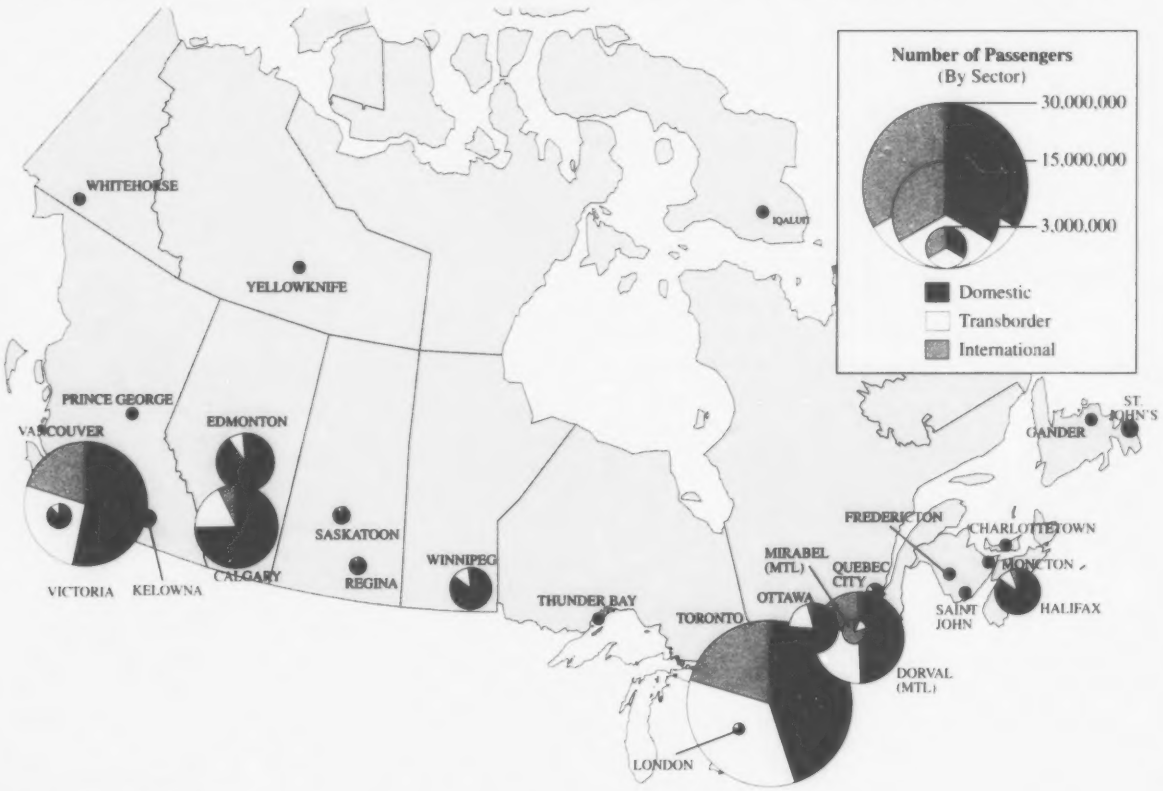
TABLE 13-18: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORTS SYSTEM (SCHEDULED DIRECT ONLY) AS OF DECEMBER 31, 2000

	Number of	*Number of Airlines*	
Airport	*International destinations*	*Canada*	*International*
Calgary	5	3	-
Edmonton	3	2	-
Halifax	7	3	2
Iqaluit	2	1	1
Montreal/Dorval	27	1	15
Montreal/Mirabel	7	3	1
Ottawa	2	2	-
Quebec City	1	1	-
St. John's	2	1	1
Toronto	54	4	22
Vancouver	19	3	12
Whitehorse	1	1	1
Winnipeg	1	1	-

Notes: Includes only NAS airports with scheduled international service service.
Includes seasonal services.
Includes scheduled services to the United Kingdom that were operated as charter services in 1999.

Source: Official Airline Guide and airline timetables

FIGURE 13-11: ENPLANED/DEPLANED PASSENGERS AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS BY SECTOR, 2000



Source: Transport Canada, Air Policy

Appendix 13-2 lists the international air services provided to and from Canada as of the end of 2000. These include foreign markets served by Canadian airlines as well as Canadian markets served by foreign airlines. This Appendix also provides a partial list of foreign markets served by charter airlines. There are 43 countries and territories with same-plane, scheduled services from Canada. Canadian airlines serve 28 of these countries.

Other International Initiatives

At a diplomatic conference held in Montreal in May 1999, the member states of the International Civil Aviation Organization (ICAO) signed the *Montreal Convention*. This new legal regime, which replaced what was set out in the 1929 *Warsaw Convention*, deals with the liability of air carriers in the event of the death or injury of a passenger, loss of baggage or cargo, or delay of international flights. Once ratified by a least 30 of the ICAO's 185 member states, the *Montreal Convention* will allow victims to claim damages, regardless of whether the carrier is at fault. It will also permit damage claims resulting from a passenger death or injury to be filed with the country where the victim lived. Airlines will be required to provide immediate financial assistance to the victim's relatives, with amounts to be deducted later from the final settlement.

Although the ratification process was begun in 2000, by year-end it had still not received the required consent of 30 ICAO member states for the convention to come into force. This is now expected in early 2001. Canada has not yet ratified the new convention which requires passage of amendments to the *Carriage by Air Act*, likely to be introduced during 2001.

APPENDIX 13-1

AMENDED FRAMEWORK FOR CANADA'S INTERNATIONAL AIR POLICY AS AT DECEMBER 21, 1999

On December 21, 1999, the Minister of Transport announced a new competitive framework for Canada's international air services and bilateral relations. The amended framework was developed as a consequence of the government's approval on that date of the plan by Air Canada to acquire Canadian Airlines International Ltd. The elements of the amended framework included the following.

- All existing and future large international country markets (those exceeding the 300,000 annual scheduled-passenger threshold, currently the United Kingdom, France, Germany, Japan, Hong Kong, Taiwan and Mexico) will become open for designation to any Canadian airlines that wish to operate a scheduled international service subject to the necessary rights (including designation and capacity rights) being available or attainable under the bilateral agreements.
- The international air charter policy will be reviewed and liberalized beginning in early 2000.
- A review of the current international air policy will begin one year from the date of the taking up of Canadian Airlines' shares, with implementation of any changes to the policy to take effect with the International Air Travellers' Association (IATA) 2001–2002 winter season. The intention is to liberalize the international air policy.
- All country designations and assignments awarded to Air Canada and Canadian Airlines International Ltd. by the Government of Canada, and all related route, capacity and associated rights will remain allocated to the two companies following the taking up of Canadian Airlines' shares. From the date of the taking up of these shares to the beginning of the IATA 2001–2002 winter season, the "use it or lose it" provision of the current policy will not apply in order tto allow the two airlines time to reorganize their international services. However, the following designations, which are currently contestable, will remain contestable: Bulgaria, Dominican Republic, India (for transatlantic services), Indonesia, Ivory Coast, Malaysia, Pakistan, Peru, Philippines, St. Kitts and Nevis, and St. Lucia.
- For any country markets not allocated, the federal government will, upon request, conduct a carrier selection in accordance with the current practice.
- The current bilateral air negotiation process will continue. The federal government will seek dual designation and cross code-share rights for Air Canada and Canadian Airlines International Ltd. in all country markets to which they are designated or assigned, as well as additional rights to meet the needs of all Canadian stakeholders and carriers.
- All slots at New York's LaGuardia and Chicago's O'Hare airports obtained by the Government of Canada during the 1995 air negotiations with the United States and allocated to Air Canada and Canadian Airlines International Ltd. by the Minister of Transport on March 10, 1995, will remain allocated to the two companies, or to Air Canada if Canadian Airlines International Ltd. becomes fully integrated into Air Canada, following the taking up of Canadian Airlines' shares and subject to the terms and conditions set out in the Minister's letter of March 10, 1995.

Source: Transport Canada, Air Policy

APPENDIX 13-2

INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 2000 (EXCLUDING CANADA–US TRANSBORDER SERVICES)

Sector	*Foreign Points Served by Air Canada*	*Canadian Points Served by Foreign Air Carriers*	*Major Charter Air Services*[1]
Atlantic	Amsterdam Copenhagen Frankfurt Glasgow London/Heathrow Manchester Milan Munich Paris Rome Tel Aviv Zurich	Aeroflot: Montreal, Toronto Air France: Montreal, Toronto British Airways: Montreal, Toronto, Vancouver Czech Airlines: Montreal El Al Israel Airlines: Toronto Icelandair: Halifax KLM: Montreal, Toronto, Vancouver Lufthansa: Toronto, Vancouver Malev: Toronto Olympic: Montreal, Toronto Pakistan International: Toronto Royal Air Maroc: Montreal Sabena: Montreal Swissair: Montreal Tarom Romania: Montreal	Amsterdam Frankfurt Glasgow Lisbon London Manchester Paris Warsaw
Pacific	Beijing Hong Kong Nagoya Osaka Seoul Shanghai Sydney Taipei Tokyo	Air China: Vancouver Air Pacific: Vancouver Cathay Pacific: Toronto, Vancouver China Airlines: Vancouver Eva Airways: Vancouver Japan Airlines: Vancouver Korean Air: Vancouver Qantas: Vancouver Singapore Airlines: Vancouver	
Southern	Antigua Barbados Bermuda Buenos Aires Havana Kingston Mexico City Montego Bay Nassau Pointe-a-Pitre Port-au-Prince Port of Spain Sao Paulo St. Lucia	BWIA: Toronto Cubana: Montreal, Toronto Japan Airlines: Vancouver Lacsa: Montreal, Toronto Mexicana: Montreal, Toronto Tropical: Toronto	Acapulco Aruba Cancun Ciego de Avila Holguin Mazatlan Manzanillo Montego Bay Nassau Punta Cana Puerto Plata Puerto Vallarta St. Maarten Santo Domingo Varadero
Other	Air Transat: Glasgow, London, Manchester, Paris, St. Maarten Canada 3000: Glasgow, London, Manchester First Air: Kangerlussuaq	Air St-Pierre: Halifax, Montreal, St. John's, Sydney	

1 Points with more than 50,000 passengers in 1999.

Source: Official Airline Guide and Transport Canada, Air Policy

APPENDIX 13-3

SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000

Airport	*Destination*	*Airline*
Calgary	Chicago	Air Canada, American Airlines
	Dallas/Fort Worth	American Airlines
	Denver	United Airlines
	Honolulu	Air Canada (Canadian Airlines), Air Transat, Canada 3000
	Houston	Air Canada (Canadian Airlines), Continental
	Kahului	Canada 3000
	Las Vegas	Canada 3000
	Los Angeles	Air Canada, Canada 3000
	Minneapolis/St. Paul	Northwest Airlines
	Phoenix	Canada 3000
	Salt Lake City	Delta (Skywest Airlines)
	San Francisco	Air Canada (Canadian Airlines), United Airlines
	Seattle	Alaska Airlines (Horizon Air)
	Spokane	Air Canada (Central Mountain Air)
Dawson City	Fairbanks	Air North
Edmonton	Chicago	Air Canada (Canadian Airlines)
	Denver	Air Canada (AirBC)
	Honolulu	Air Transat, Canada 3000
	Kahului	Canada 3000
	Las Vegas	Canada 3000
	Los Angeles	Air Canada (Canadian Airlines), Canada 3000
	Minneapolis/St. Paul	Northwest Airlines
	Phoenix	Canada 3000
	Seattle	Alaska Airlines (Horizon Air)
Halifax	Boston	Air Canada (Air Nova), American Airlines (American Eagle)
	New York/Newark	Air Canada, Continental (Continental Express)
	Washington/Dulles	Air Canada
Hamilton	Pittsburgh	US Airways (Chautauqua Airlines)
Kelowna	Seattle	Alaska Airlines (Horizon Air)
London	Detroit	Northwest Airlines (Mesaba Airlines)
Montreal/Dorval	Atlanta	Delta
	Boston	Air Canada, American Airlines (American Eagle), Delta (Comair)
	Chicago	Air Canada (Canadian Airlines), American Airlines
	Cincinnati	Delta (Comair)
	Cleveland	Continental (Continental Express)
	Dallas/Fort Worth	American Airlines
	Denver	Air Canada
	Detroit	Northwest Airlines
	Fort Lauderdale	Air Canada
	Hartford	Air Canada (Air Nova)
	Los Angeles	Air Canada
	Miami	Air Canada, American Airlines
	Minneapolis/St. Paul	Northwest Airlines
	New York/Kennedy	American Airlines (American Eagle)
	New York/LaGuardia	Air Canada, Delta (Comair)
	New York/Newark	Air Canada, Continental
	Orlando	Air Canada (Canadian Airlines)
	Philadelphia	Air Canada, US Airways
	Pittsburgh	US Airways
	Portland, Maine	Air Canada (Air Nova)
	San Francisco	Air Canada
	Tampa/St. Petersburg	Air Canada
	Washington/Dulles	Air Canada
	Washington/Reagan	Air Canada
Montreal/Mirabel	Fort Lauderdale	Air Transat, Canada 3000, Royal Airlines
	Orlando	Air Transat, Royal Airlines

(continued)

APPENDIX 13-3 (Continued)

SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000

Airport	*Destination*	*Airline*
Ottawa	Boston	Air Canada, American Airlines (American Eagle)
	Chicago	Air Canada, American Airlines
	Detroit	Northwest Airlines (Mesaba Airlines)
	New York/LaGuardia	Air Canada
	New York/Newark	Air Canada (Canadian Regional), Continental (Continental Express)
	Philadelphia	US Airways (Mesa Airlines)
	Pittsburgh	US Airways (PSA Airlines)
	Raleigh/Durham	Air Canada (Canadian Regional)
	Washington/Dulles	Air Canada
	Washington/Reagan	Air Canada
Prince Rupert	Ketchikan	Promech Air
Quebec City	Boston	American Airlines (American Eagle)
	Fort Lauderdale	Air Transat
	New York/Newark	Continental (Continental Express)
Regina	Minneapolis/St. Paul	Northwest Airlines
Saskatoon	Minneapolis/St. Paul	Northwest Airlines
Thunder Bay	Minneapolis/St. Paul	Northwest Airlines (Mesaba Airlines)
Toronto	Akron/Canton	Air Canada (Air Georgian)
	Albany	Air Canada (Air Georgian)
	Allentown	Air Canada (Air Ontario)
	Atlanta	Air Canada, Delta
	Baltimore	Air Canada (Air Ontario), US Airways (Piedmont Airlines)
	Boston	Air Canada, American Airlines (American Eagle)
	Charlotte	Air Canada (Canadian Regional), US Airways
	Chicago	Air Canada, American Airlines, United Airlines
	Cincinnati	Delta (Comair)
	Cleveland	Air Canada, Continental (Continental Express)
	Columbus	Air Canada (Air Ontario)
	Dallas/Fort Worth	Air Canada (Canadian Airlines), American Airlines
	Dayton	Air Canada (Air Georgian)
	Denver	Air Canada, United Airlines
	Detroit	Air Canada (Canadian Regional), Northwest Airlines
	Fort Lauderdale	Air Canada, Air Transat, Canada 3000, Royal Airlines
	Fort Myers	Air Canada, Air Transat, Canada 3000
	Fort Wayne	Air Canada (Air Georgian)
	Grand Rapids	Air Canada (Air Georgian)
	Gulfport/Biloxi	Canada 3000
	Harrisburg	Air Canada (Air Ontario)
	Hartford	Air Canada (Air Ontario)
	Honolulu	Air Canada (Canadian Airlines)
	Houston	Air Canada (Canadian Airlines), Continental
	Indianapolis	US Airways (Chautauqua Airlines)
	Kansas City	Air Canada
	Las Vegas	Air Canada
	Los Angeles	Air Canada, American Airlines, Canada 3000
	Louisville	Air Canada (Air Georgian)
	Manchester	Air Canada (Air Georgian)
	Miami	Air Canada, American Airlines
	Milwaukee	Air Canada, Midwest Express Airlines (Skyway Airlines)
	Minneapolis/St. Paul	Air Canada (Canadian Regional), Northwest Airlines
	Nashville	Air Canada
	New Orleans	Air Canada (Canadian Airlines)
	New York/Kennedy	Delta (Atlantic Southeast Airlines)
	New York/LaGuardia	Air Canada, American Airlines
	New York/Newark	Air Canada, Canada 3000, Continental
	Orlando	Air Canada, Air Transat, Canada 3000

(continued)

APPENDIX 13-3 (Continued)

SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000

Airport	*Destination*	*Airline*
Toronto (cont'd)	Phoenix	Air Canada, America West Airlines
	Philadelphia	Air Canada, US Airways
	Pittsburgh	Air Canada, US Airways
	Providence	Air Canada (Air Ontario)
	Raleigh/Durham	Air Canada (Canadian Regional)
	Richmond	Air Canada (Air Ontario)
	Rochester	Air Canada (Air Georgian)
	San Diego	Air Canada
	San Francisco	Air Canada, United Airlines
	San Jose	Air Canada
	Seattle	Air Canada
	St. Louis	Air Canada, Trans World Airlines (Chautauqua Airlines)
	St. Petersburg	Air Transat, Canada 3000, Royal Airlines
	Syracuse	Air Canada (Air Georgian)
	Tampa	Air Canada
	Washington/Dulles	Air Canada
	Washington/Reagan	Air Canada, US Airways (Mesa Airlines)
	West Palm Beach	Air Canada, Air Transat
Vancouver	Boston	Air Canada
	Chicago	Air Canada (Canadian Airlines), United Airlines
	Dallas/Fort Worth	Air Canada (Canadian Airlines), American Airlines
	Denver	Air Canada, United Airlines
	Honolulu	Air Canada (Canadian Airlines), Air Transat, Canada 3000
	Houston	Continental
	Kahului	Air Canada, Air Transat, Canada 3000
	Kona	Canada 3000, Royal Airlines
	Las Vegas	Alaska Airlines, Canada 3000
	Lihue	Royal Airlines
	Los Angeles	Air Canada, Alaska Airlines, Canada 3000, United Airlines
	Minneapolis/St. Paul	Northwest Airlines
	New York/Kennedy	Air Canada
	Palm Springs	Alaska Airlines
	Phoenix	Alaska Airlines, America West Airlines
	Portland, Oregon	Air Canada (AirBC), Alaska Airlines (Horizon Air), Delta (Skywest Airlines)
	Salt Lake City	Delta (Skywest Airlines)
	San Francisco	Air Canada (Canadian Airlines), Alaska Airlines, United Airlines
	Seattle	Air Canada (AirBC), Alaska Airlines (Horizon Air), United Airlines (Skywest Airlines)
	Seattle/Boeing Field	North Vancouver Air
	Spokane	Air Canada (Central Mountain Air)
	St. Louis	Trans World Airlines
	Washington/Dulles	Air Canada
Victoria International	Honolulu	Canada 3000
	Las Vegas	Canada 3000
	Seattle	Alaska Airlines (Horizon Air)
Victoria Harbour	Seattle/Boeing Field	Helijet Airways
	Seattle/Lake Union	Kenmore Air
Whitehorse	Juneau	Air North
Winnipeg	Chicago	Air Canada
	Denver	Air Canada (AirBC)
	Las Vegas	Canada 3000
	Minneapolis/St. Paul	Northwest Airlines
	Orlando	Canada 3000

Source: Transport Canada, Air Policy

PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

14

Lower transport prices continued to sustain economic growth. While the demand for transport services was growing, fuel prices increases in 2000 were a major concern.

This chapter examines the productivity performance of the different modes of transportation in Canada and assesses how these productivity gains offset increases in factor prices in transport industries through measures of cost per unit of output. It aiso reviews the performance of each transport industry segment, highlighting the most recent years for which data are available. The effect of higher fuel prices on each segment of the industry is also explored. At the end of the chapter, a series of tables shows price and output indicators, user and cost savings and cost structures, productivity and unit cost indicators, and the possible effects of fuel price increases.

After a period of robust annual productivity growth in the early 1990s, productivity increases in the transportation industry remained firm at 2.5 per cent a year during the second half of the decade,[1] as shown in Table 14-1. From 1998 to 1999, productivity improved by 2.3 per cent.

When markets are competitive and efficient, some or all benefits of productivity gains can be passed on to users in the form of lower prices, and while the prices of selected transport industries[2] increased nominally by 0.1 per cent during this time, they fell in real terms by 0.8 per cent annually. Thanks to these lower prices, and a growing economy, demand in the transport industry grew during this period. Between 1994 and 1999, the output of large transport firms grew annually by 6.8 per cent, whereas the output of the economy's business sector grew annually by 3.9 per cent. Based on the first half of the year 2000, the output growth of selected transport industries still exceeded the one of the whole economy.

TABLE 14-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY

	Annual per cent	
	1994 – 1999	*1999 – 2000*
Productivity		
Selected Transport Industries	2.8	2.3[1]
Business Economy	1.0	1.7[1]
Price		
Selected Transport Industries	0.1	3.7[1]
Business Economy	0.9	4.4[1]
Output		
Selected Transport Industries	6.8	4.9[1]
Business Economy	3.9	4.5[1]

1 Preliminary estimate.
2 Change from 1998 to 1999.
3 Based on data for the first half of the year 2000.

Source: Transport Canada, based on Statistics Canada files

In 2000, the increase in fuel prices was a particular concern. This chapter discusses several effects of this increase, including the rise in total costs that can occur when there are no productivity gains to offset the impact of the price changes, and the increase in transport prices if the fuel cost increments are passed on to transport users. The analysis presents a worst-case scenario, based on the assumptions that 1) all increases in the price of crude oil[3] are transmitted to the transport industry's fuel costs and 2) carriers do not use hedging strategies to minimize the cost increases.

Crude oil prices hit a low of US$12 a barrel[3] in the first quarter of 1999, and by September 2000 had climbed to US$34 a barrel, averaging US$30 a barrel for the year. In 1999, the members of the transport industry did not pay fuel prices that reflected the changes in crude oil prices, so that in 2000 the fuel prices they paid included the

1 Different database definitions, assumptions, coverage, reference years and calculation procedures may produce different results and affect observed trends in productivity and prices. Changes in available databases entail methodological changes that alter the results. This explains differences between the series shown in this annual report and the series presented in previous annual reports.

2 Larger firms in rail freight, air and trucking, or 93 per cent of the revenues of all the firms reviewed in this chapter.

3 Reference price of Cushing.

catch-up in refiners' and distributors' margins. This is why 1997[4] has been used in this report as a base year for analyzing fuel price changes. In 1997, fuel costs accounted for about 11.6 per cent of the transportation sector's total costs.

Although it is unusual for an annual report to examine an issue such as higher fuel prices by simulating its effect, this report does so because the subject is an important one for many and it provides valuable insights. Therefore, in the modal sections of this chapter, the results of such simulations are presented under the heading "Effects of Higher Fuel Prices."

Fuel prices, prevailing during the year 2000, would have increased transport fuel costs by 32 per cent, assuming constant fuel efficiency. Table 14-2 shows that this would cause total costs to increase by 3.7 per cent and that transport prices would have had to rise by 4.2 per cent had the increased fuel costs been passed on totally to transport users.

The effect of increased fuel costs on government carriers has been significantly different. In 1997, government-owned carriers had a lower fuel cost share than commercial carriers — 3.4 per cent compared with 12.8 per cent of total costs. This means that had increased fuel prices been applied, fuel costs would have added an extra 1.1 per cent to public carriers' total costs and 4.1 per cent to business carriers' total costs. However, if the higher fuel costs had been absorbed by users of public carriers' services, transport prices would have climbed by 2.6 per cent. Since public carriers' operating subsidies are equal to their revenues from users, subsidies likely would have increased by as much as transport prices.

TABLE 14-2: SIMULATION OF THE EFFECT OF 2000 FUEL PRICE INCREASES

Total Costs, Transport Prices and Subsidies: 1997 Based

	Business Carriers	*Public Carriers*[1]	*All Carriers*
Fuel Cost Share (per cent of total costs)	12.8	3.4	11.6
Fuel Prices in Cents per Litre	36.7	36.7	36.7
Increase in Fuel Costs (per cent)	32.0	32.5	32.0
Total Cost Increase (per cent)	4.1	1.1	3.7
Transport Price Increase (per cent)	4.3	2.6	4.2
Subsidy Increase (per cent)	N/A	2.8	N/A

1 Via Rail and public transit systems.

Source: Transport Canada, based on Statistics Canada files

RAIL INDUSTRY

THE FREIGHT RAIL INDUSTRY

This section focuses on the productivity and financial performance of the Canadian operations of Canadian National (CN) and Canadian Pacific Railways (CPR). A brief discussion of regional railways is found in the section on financial performance.

The treatment of results and observed trends in productivity and prices in this annual report may differ slightly from than in earlier annual reports, mainly because of: changes in accounting principles by railways; a new approach to dealing with labour restructuring costs; and a modified price index calculation procedure.

In 1999, Canadian operations accounted for 67 per cent of CN's total revenues and 73 per cent of CPR's total revenues.

As a result of strong productivity growth and intense cost reduction efforts, CN and CPR have shown good financial performance in recent years, and despite higher fuel prices in 2000, both reported further improvement in operating ratios to 69.6 per cent and 76.9 per cent, respectively, excluding special charges.

PRICE AND OUTPUT INDICATORS

From 1994 to 1999, the output of CN's and CPR's freight operations in Canada grew on average by one per cent a year. This modest average rate of growth is explained in part by the use of 1994 — a record year of output growth — as the base year.

During the same period, shippers received a portion of the benefits from the railways' productivity gains: rail freight prices declined nominally by 0.8 per cent a year. It is estimated that the price performance of the two mainline railways has, since 1994, allowed shippers' rail freight costs to be reduced by $530 million, equivalent to an eight per cent reduction in shippers' rail freight bill over this period.

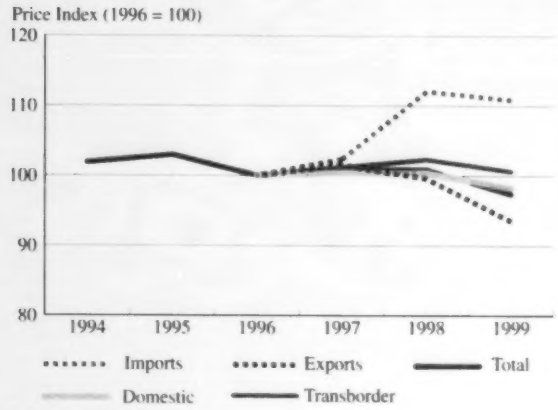
Overseas exports, in particular, were sustained by increasingly lower rail freight rates. Figure 14-1 compares domestic, export, import (traffic from inland points to ports, and traffic from ports to inland points) and transborder (Canada–US) traffic rail price indices from 1994 to 1999.[5] In 1999, the overall freight price index

4 Table 14-14 at the end of this chapter shows the effect that higher fuel prices have on 1999 data.

5 1996 is the first year for which rail price indices of exports, imports and transborder traffic are available.

declined by three per cent; the price decline was more significant in overseas exports than in domestic traffic.

FIGURE 14-1: RAIL FREIGHT PRICE INDICES BY SECTOR, 1994 – 1999



Source: Transport Canada

Cost Structure

The total cost of rail freight transportation can be broken down into variable costs and fixed or capital costs. Variable costs, such as labour, fuel and other materials and services, accounted for the majority of total costs (70 per cent) in 1999, while fixed or capital costs, such as depreciation, and leasing expenses, debt costs and return to equity, accounted for the remaining 30 per cent. Since 1994, significant railway capital expenditures have caused capital costs to increase by three per cent.

In recent years, labour costs have continued to decline, a result of several major workforce restructurings in the industry. Between 1994 and 1999, labour cost share decreased from 41 per cent to 37 per cent of total costs. In 1999, fuel costs represented eight per cent of total costs, and materials other than fuel and services accounted for 25 per cent.

Productivity and Unit Cost Indicators

Between 1994 and 1999, freight railways in Canada showed impressive productivity growth: total factor productivity increased on average by 3.9 per cent a year. More efficient use of variable inputs was the main reason for this trend. The variable factor productivity, which compares output growth with the growth of aggregate non-capital inputs such as labour, fuel and materials, increased by five per cent a year. During the same period, the partial productivity of capital inputs also increased, at a rate of 1.1 per cent a year.

Corresponding to the productivity improvement, the railways' unit cost curve showed a downward trend between 1994 and 1999. The average annual rate of unit cost reduction was 2.5 per cent. Thanks to lower unit costs, CN and CPR have been able to set competitive prices and improve their financial performance at the same time. With 1994 as the base year, the improved productivity performance has allowed the rail industry to achieve total costs in 1999 that are about $1.2 billion lower than they otherwise would have been. At 18 per cent of the industry cost base, these savings are significant.

Financial Performance

As Table 14-3 shows, Canadian Class I freight railways continued to enjoy increased profits in 1999, when the average operating ratio declined to 79.7 per cent, excluding unusual charges, an 8-point drop from the 1994 ratio. Without freight rate increases, the railways achieved the higher profitability by improving productivity and reducing costs. Between 1994 and 1999, while operating revenues increased by only 1.2 per cent, operating expenses declined by 9.2 per cent.

The total combined operating income of CN's and CPR's Canadian operations rose sharply in 1999 to $1.3 billion, an increase of 15 per cent from 1998.

In recent years, the number of regional or short-haul freight railways in Canada has increased significantly.[6] This is one of the main reasons for the 17 per cent increase in these railways' total operating revenues from 1994 to 1999. The average operating ratio in 1999 was affected by restructuring in the rail shortline sector, including a number of new entries, exits, and mergers and consolidations. The increase in operating ratio — 3.7 points in 1999 — should not be perceived as a trend.

6 The number of short-haul railways that filed annual reports with Transport Canada, increased from 16 in 1994 to 29 in 1999.

TABLE 14-3: THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS

(Millions of dollars)

	1994	1997	1998	1999
Class I Railways — Canadian Operations				
Revenue	6,426	6,778	6,436	6,502
Expenses[1]	5,635	5,596	5,289	5,184
Operating Income	791	1,182	1,147	1,318
Operating Ratio (per cent)	87.7	82.6	82.2	79.7
Regional/Shortline railways				
Revenue	612	711	749	715
Expenses[1]	511	630	662	658
Operating Income	101	81	87	57
Operating Ratio (per cent)	83.4	88.7	88.3	92.0

1 Excludes special charges.

Source: Carriers' Annual Reports filed with Transport Canada

Effects of Higher Fuel Prices

The average fuel price of freight railways was 32 cents per litre in 1997 and declined to 28 cents in 1998–1999. This analysis estimated that average rail diesel prices increased to 43 cents per litre in 2000, a 15 cent increase from the level before the wide fuel price fluctuations that occurred between 1998 and 1999[7]. This equals a 35 per cent increase in fuel costs and would have contributed to a 3.2 per cent increase in total costs. Had the higher fuel costs been absorbed by users, in the absence of any offsetting factors, rail freight rates would have gone up by 3.5 per cent.

CN and CPR reported that fuel costs rose an average of 45 per cent between 1999 and 2000. This was in line with the estimate in Table 14-14, which shows the possible effects of fuel price increases. While these two main railways were able to offset part of these increases by improving fuel efficiency and reducing costs in other areas, they also raised freight rates in the second half of 2000 to compensate for the higher fuel prices.

VIA Rail

Over the past decade, VIA Rail's revenues have grown significantly and its cost recovery ratio has doubled.

In April 2000, the Government of Canada announced $400 million in capital funding to improve VIA Rail passenger services over a five-year period.

Price and Output Indicators

From 1994 to 1999, VIA Rail significantly improved its operating revenues due to increases in passenger volume. From 1994 to 1999, prices of rail passenger services increased by three per cent a year on average. These price increases were not sufficient to make VIA profitable but meant that VIA Rail's passengers contributed partly to the reduction of VIA Rail's operating deficits. Rail passenger demand grew by about two per cent per year during the same five-year period. In 1999, however, strong growth in demand was the main reason behind an increase in total passenger revenue, which climbed by nine per cent during the year.

By market, long-haul services showed above-average performance. From 1994 to 1999, the output of long-haul services increased by 3.1 per cent a year, and the price of long-haul services increased by 4.3 per cent a year. Over the same period, prices within the Quebec–Windsor corridor increased on average by 2.5 per cent a year, but growth in demand was relatively modest at 0.7 per cent a year. Major price increases had occurred in remote regions in the late 1990s, with prices rising at a rate of 3.5 per cent a year.

Cost Structure

In 1999, variable costs represented 83 per cent of VIA Rail's total costs, with labour, the largest component, accounting for 40 per cent. Fuel cost share remained relatively low at 3.8 per cent of the total cost, due to 1999's lower average fuel prices. Payments to other rail carriers represented eight per cent of total costs, and marketing costs accounted for six per cent. Other variable costs are non-income taxes, insurance, and other materials and services.

VIA Rail's capital cost share, including the estimated opportunity cost of its capital, accounted for 17 per cent of total costs in 1999.

Productivity and Unit Cost Indicators

VIA Rail's productivity increased significantly in the late 1990s. Between 1994 and 1999, the company's total factor productivity increased by 28.5 per cent, an annual gain of 5.1 per cent. This robust productivity performance allowed VIA Rail to reduce its cost in nominal terms by $145 million, or 31 per cent of its cost base over the five-year period.

7 The sum of 43.2 cents a litre was arrived at by adding an increase of 15.1 cents a litre to the average fuel price of 28.1 cents a litre paid by CN and CPR.

Labour, fuel and services supplied by CN and CPR, and other materials and services can be combined to form the "variable" factor of production of rail passenger services; this eliminates substitution effects between these factors. From 1994 to 1999, the productivity of this variable factor increased on average by six per cent a year. Partial labour productivity grew by 7.7 per cent a year.

Financial Performance

While VIA Rail still relies on government funding, its operating cost recovery ratio has been continuously rising over the past decade. The carrier reported a revenue/cost ratio of 56.7 per cent in 1999. After accounting for the cost of capital, the cost recovery ratio was 46.5 per cent, as shown in Table 14-4.

Between 1994 and 1999, operating revenues increased by 25 per cent, from demand and price increases. Service rationalization and cost control measures allowed VIA Rail to reduce total operating expenses by 12 per cent during the same period.

VIA Rail made a major commitment to invest in new equipment of approximately $125 million in the near future. The acquisition of 139 new passenger cars was announced following a commitment by the federal government to provide $400 million in capital funding to improve passenger rail transportation.

TABLE 14-4: VIA RAIL'S FINANCIAL PERFORMANCE RESULTS, 1996 – 1999

(Millions of dollars)

	1996	1997	1998	1999
Operating Revenues	173	188	197	216
Operating Expenses	489	429	424	430
Total Cost	544	468	461	464
Cost Recovery Ratio (per cent)[2]	31.7	40.2	42.7	46.5
Operating Subsidies	262	196	182	169

1 Includes depreciation, but excludes extraordinary charges
2 Operating Revenues divided by Total Cost

Source: Transport Canada, based on Statistics Canada files

Effects of Higher Fuel Prices

In 1997, VIA Rail paid an average of 32.5 cents[8] per litre for its fuel; it would have paid 44.1 cents per litre in 2000, assuming no hedging program in place. Such a price increase would have resulted in fuel costs 38 per cent higher than in 1997. VIA Rail had a relatively lower fuel cost share in its total costs (3.8 per cent) because fuel is outweighted by other costs such as labour, marketing and payment for infrastructure access. Nevertheless, the impact of such an increase would have caused VIA Rail's total costs to rise by about 1.6 per cent. Unless other costs could be cut to offset the higher fuel costs, the increased costs would have to be covered in one of two ways: the public would have had to absorb the increase, leading to 4.2 per cent higher fares, or the federal government would have had to raise its subsidy to VIA Rail by 3.9 per cent.

In 2000, VIA Rail appears to have reduced partly the effect of higher fuel prices, thanks to fuel price-hedging programs. The impact of higher fuel prices on the carrier's fuel costs may, however, show up in 2001.

THE TRUCKING INDUSTRY

This section focuses on the performance of for-hire trucking firms with annual revenues equal to or greater than $1 million.[9] Individual carriers whose main activity is the movement of household goods (four per cent of larger carrier revenues) have been excluded.

Price and Output Indicators

From 1994 to 1999, the revenues of the trucking industry as a whole increased by eight per cent a year. This growth came from an increased level of activity and not increased prices, since prices in 1999 were below their 1994 levels. In real terms, the price decline was 1.1 per cent a year. By 1999, the price reductions observed in for-hire trucking activity since 1994 had allowed a reduction of shippers' costs in the order of $750 million.

While the prices dropped in real terms, they continued to increase at a greater rate than did rail prices.Yet, the trucking industry has continued to make market gains, after the price effect of the growth observed in both the rail and trucking modes has been eliminated. Since 1994, the trucking industry has gained 7.6 percentage points in market share.

8 The average price was calculated by dividing total costs by litres of fuel consumed by VIA Rail. This price was slightly higher than the average price calculated for CN and CPR. As each carrier has its own fuel price-hedging program, it is not surprising that carriers in the same industry have different average fuel prices.

9 Main changes from the material presented in earlier annual reports include: the addition of non-transportation revenues and expenses, which improve industry operating ratios; revised estimates of the revenue split between transborder and domestic revenues; and revision of fuel prices and capital stock data.

The prices of domestic intraprovincial trucking services and interprovincial trucking services fell slightly between 1994 and 1999, and the prices for transborder trucking services increased by only 0.8 per cent a year during that period.

Canadian-based transborder trucking operations, in particular, have increased remarkably, with output growth averaging 12 per cent a year. The sources of growth are increased Canada–US trade, deeper penetration of the US market by Canadian-based carriers, and gains by Canadian-based carriers' market share in transborder activities. The latter gains can be explained in part by the low value of the Canadian dollar. From 1994 to 1999, the growth of transborder output was about double the output growth from domestic markets.

Preliminary results for 2000 show that revenue growth was still robust at 9.4 per cent.

Cost Structure

In the second half of the 1990s, the industry exhibited a stable cost structure. The variable portion averaged 87 per cent, and the capital cost share was 13 per cent. Among variable costs, labour accounted for 45 per cent of total cost, and fuel represented 13 per cent. In 1999, the leasing share in capital and total costs was higher than the 1994–1999 averages for leasing. The proportion of leasing in total cost represented only 3.6 per cent, but 27 per cent of total capital costs.

Productivity and Unit Cost Indicators

Total factor productivity in the trucking industry increased by two per cent annually between 1994 and 1999, and the productivity of the variable factors of production grew by 2.5 per cent a year. A decline in capital productivity reversed previous trends.

Trucking unit costs in 1999 were one per cent lower than in 1994. After the effects of general inflation are removed, this translates into a cost reduction that had reached $725 million by 1999, 4.6 per cent of the industry cost base. From 1994 to 1999, trucking cost reductions came from lowering variable costs, since capital costs per unit of production increased during that period.

Financial Performance

The trucking industry can be viable with an operating margin of about four per cent of revenues. Other transport industries, such as rail, require higher operating margins, as more assets are needed to generate each dollar of revenue.

Between 1994 and 1999, the financial performance of the trucking industry weakened marginally, with prices falling slightly more rapidly than unit costs. In 1999, prices fell more rapidly than costs did. This led to a slight deterioration in operating ratios, which exceeded 95 per cent, as shown in Table 14-5. Still, the financial returns of the trucking industry, as measured by the rate of returns on fixed assets, remain on average, high enough to ensure the long-term viability of the industry.

Based on the performance of large trucking carriers, profitability should have declined slightly in 2000. The operating ratio of the larger carriers rose from 93.9 per cent to 94.5 per cent.

Effects of Higher Fuel Prices

Before the 1999–2000 fuel price increases, the trucking industry was paying an average of 49 cents a litre for fuel. This analysis assumed that, during the past year, diesel prices increased by 15 cents a litre to 63 cents a litre. This corresponds to diesel prices reported by Statistics Canada, less the Goods and Services Tax (GST) and applicable provincial sales taxes. Such an increase would translate into fuel costs that are 25 per cent higher contributing to an increase in total costs of 3.4 per cent. If the higher fuel costs had been passed on to shippers in 2000, without any offsetting factor, transport prices would have had to go up by 3.5 per cent.

Preliminary data for the first half of 2000 indicates that the fuel price surge increases fuel costs by about 25 per cent, confirming the above estimates Transport price increased by 4.3 per cent, corresponding to a 3.5 per cent increase in transport prices since 1997.

TABLE 14-5: THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS

(Millions of dollars)

	1994	*1997*	*1998*	*1999*
Operating Revenues	10,872	14,061	14,600	15,970
Operating Expenses	10,282	13,293	13,788	15,207
Operating Income	590	768	812	763
Operating Ratio (per cent)	94.6	94.5	94.4	95.2
Return on Assets (per cent)	22.4	21.7	20.4	17.7

Source: Transport Canada

BUS INDUSTRY

The bus transport industry is made up of three segments: intercity bus services, school bus services and urban transit services.[10] The activities of school bus operators are not covered in this chapter. Urban transit services are reviewed in the next section.

SCHEDULED INTERCITY BUS SERVICES

PRICE AND OUTPUT INDICATORS

Intercity bus industry revenues fell 2.4 per cent in 1999, leaving them at a level that was still 11 per cent higher than 1994 revenues. Prices increased by 1.7 per cent, whereas output fell by four per cent. Sources of industry revenues were as follows: 84 per cent from passenger services, 12 per cent from parcel services and four per cent from various other activities. These proportions have not changed since 1994.

The level of market share by scheduled bus services seems to have stabilized at a 40 per cent share of passenger service revenues. Back in 1994, the revenue share of operators of scheduled bus services was 53 per cent. The revenue share of charter and tour services reached 43 per cent in 1999. The greatest growth has occurred in the specialized services, such as limousine and sightseeing services. This market segment doubled its share of passenger services, from 8.5 per cent in 1994 to 17 per cent in 1999.

Changes in demand for each type of intercity bus service appear to be related to price changes for the services. Demand for scheduled intercity bus services fell by 20 per cent between 1994 and 1999, as nominal prices for those services went up by seven per cent. Conversely, activity levels increased by 57 per cent for other bus services, whose prices fell by eight per cent.

Over the 1994–1999 period, total output of the bus industry increased by 2.2 per cent a year, while its prices declined by 0.2 per cent annually.

COST STRUCTURE

The cost structure of the bus industry remained relatively stable. Labour costs represented about 42 per cent of the industry's costs in 1999, compared with 41 per cent in 1994. In 1999, fuel costs represented 8.4 per cent of total costs, versus eight per cent in 1994. The share of capital costs (leasing, depreciation and financing) increased from 17 to 21 per cent. Operating costs other than fuel and labour changed more significantly, losing 4.5 percentage points from their 1994 level of 33.4 per cent.

PRODUCTIVITY AND UNIT COST INDICATORS

Despite a small decline in 1999, total factor productivity has increased since 1994 at an annual rate of 3.8 per cent. Trends toward lower capital intensity prevailed until the mid-1990s. Then, between 1996 and 1999, the capital intensity of the industry increased by six per cent. This has contributed to the 26 per cent gains in the productivity of other factors of production. The productivity gains, combined with moderate factor price increases, led to unit cost declines of 1.6 per cent a year. This caused industry costs to drop by $76 million from the level they would otherwise have reached in 1999. This cost reduction was equivalent to 13 per cent of industry costs in 1999.

FINANCIAL PERFORMANCE

Table 14-6 shows that between 1994 and 1999 the bus industry achieved operating ratios that generated viable returns. These operating ratios were much lower than those of the early 1990s. The turnaround was achieved in an environment of declining demand for the main revenue segment of the industry, scheduled bus services.

Productivity gains made by the industry were directly responsible for the improvement in the profitability of the intercity bus industry. Prices were not a factor, since they fell during this period.

TABLE 14-6: SUMMARY OF FINANCIAL INDICATORS FOR ALL INTERCITY BUS INDUSTRIES

(Millions of dollars)

	1994	1997	1998	1999[1]
Operating Revenues	579	593	657	641
Operating Expenses	530	513	557	545
Operating Ratio (per cent)	91.6	86.5	84.8	85.1

1 Preliminary estimate

Source: Transport Canada, based on Statistics Canada files

10 The 1994 – 1999 data have been revised to reflect the new North American Industry Classification System (NAICS) and revised capital stock data. Under NAICS, "bus" includes limousine and sightseeing services.

Effects of Higher Fuel Prices

Because fuel information in the bus industry is incomplete, this assessment uses the fuel prices experienced by the trucking industry. If fuel prices increased from 49 cents a litre to 63 cents a litre, in 2000 as they did for the trucking industry, fuel costs for the bus industry would have risen by 26 per cent in 2000, and total costs would have increased by 2.5 per cent. Intercity bus transport prices would have gone up by 2.5 per cent if the higher fuel costs had been passed on to users.

Urban Transit Systems

This section reviews the activities of urban transit service operators, members of the Canadian Urban Transit Association. Revenues from users grew by 6.6 per cent in 1999. The two per cent decline in operating subsidies was more than offset by the 24 per cent increase in capital subsidies.

Price and Output Indicators

From 1994 to 1999, the output of transit systems advanced annually by an average of 0.8 per cent. Since 1996, output growth has reached three per cent per year. Between 1994 and 1999, prices increased by 3.2 per cent a year. Since 1996, in concert with stronger output growth, price increases have slowed to 1.6 per cent a year. Overall, transit prices increased on average by 2.3 per cent per year in real terms over this period. This real increase represented, for the riders of transit systems, an additional disbursement of $186 million by 1999.

Cost Structure

Capital costs account for 30 per cent of total costs,[11] making the urban transit industry the most capital intensive in the transport sector. In transport sectors other than transit, the cost of capital represents less than one fifth of total costs.

By far the most labour-intensive industry of the transport sector, urban transit had labour costs of as much as 51 per cent of total transit costs in 1999. In comparison, the labour cost share of all other transport sectors averaged 37 per cent.

Two factors explain this. The first is the cost of transit worker's salaries, which have been higher than average salaries by about $725 million over the 1994–1999 period, a sum that is close to half of transit operating subsidies. While the rail industry, for example, can offset the impact of higher salaries through productivity gains, such gains are not attained in transit systems. The second factor is the cost of goods and services other than fuel which are far lower than in other transport sectors: these costs account for 14 per cent of total costs in transit systems and 32 per cent of total costs in the rest of the transport industry. Outsourcing is less common in transit systems than in other transport sectors.

Productivity and Unit Cost Indicators

The total factor productivity of transit systems gained 0.4 per cent in 1999, but it is below the 1994 levels. The performance of the variable factors of production was more robust, growing at a pace of 0.8 per cent a year. The annual productivity decline of capital (-3.6 per cent) reflected the increased capitalization of transit systems.

Per unit of output, transit costs fell by 1.3 per cent between 1994 and 1999. In real terms, the lower unit costs included in 1999 savings were equivalent to $58 million. The reduction of variable costs was three times that amount.

Financial Performance

Table 14-7 shows that the total cost of transit systems was estimated at almost $4.1 billion in 1999. Cash operating costs were close to $2.9 billion, an increase of $100 million over the previous year. Users paid 45 per cent of the total cost of the system. Cost recovery went up steadily from 1994 to 1999. Operating subsidies were relatively stable, while capital subsidies continued their strong climb. This trend may be reversed now that Ontario, which accounts for 75 per cent of all capital subsidies, has reduced its financial transfers to local authorities.

11 A different methodology was used to gather data for this annual report than was used for last year's report: Industry capital stock estimates have been revised, affecting the cost of capital. Under the previous methodology, the capital cost share would have been 27 per cent. This reduces the cost share of other factors of production.

TABLE 14-7: SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS

(Millions of dollars)

	1994	*1997*	*1998*	*1999*
Operating Revenues	1,519	1,712	1,744	1,855
Cash Operating Expenses	2,745	2,788	2,789	2,879
Capital Cost	938	1,089	1,132	1,201
Total Cost	3,567	3,877	3,920	4,080
Operating Subsidies	1,579	1,495	1,523	1,492
Capital Subsidies	414	641	858	1,068
Cost Recovery Ratio (per cent)	41.2	44.2	44.5	45.5

Source: Transport Canada, based on Statistics Canada files

TABLE 14-8: FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES, 1999

	Quebec	*Ontario*	*Alberta*	*British Colombia*	*Total*[1]
Price levels (Canada = 100.0)	83.4	122.0	71.9	90.9	100
Total factor productivity (Canada = 100.0)	121.9	89.2	110.8	98.0	100
Total unit cost (Canada = 100.0)	88.5	113.3	83.4	103.2	100
Cost recovery (per cent)	39.7	48.7	41.6	37.5	44.5
Revenue Shortfall Per Passenger[2] (millions of dollars)	1.28	1.66	1.52	2.03	1.54

1 Includes the rest of Canada.
2 Difference between total costs and autonomous revenues; it can be higher than operating subsidies, as it includes higher depreciation and capital costs than reported by transit systems.

Source: Transport Canada, based on Statistics Canada files

PERFORMANCE OF TRANSIT SYSTEMS: SELECTED PROVINCES

This section examines key indicators of the performance of transport systems for British Columbia, Alberta, Ontario and Quebec, as shown in Table 14-8. The transit systems of other provinces are small; together, they account for 5.1 per cent of transit passenger revenues in Canada. More importantly, the analyses of individual provinces' systems were restricted by data limitations.

Ontario has the highest unit costs and the highest prices, while Alberta has the lowest unit costs and prices among the selected provinces. While Quebec has higher productivity than does Alberta, it is second in terms of unit costs, because it pays the highest salaries in the country.

In 1999, the revenue shortfall of all systems was around $2.2 billion; this figure has been remarkably stable over time. The Ontario transit systems had the highest cost recovery of all systems, at more than 50 per cent of their total costs. British Columbia had the greatest revenue shortfall per passenger, at more than $2 million, because of low prices relative to unit costs, and the fact that transit riders were travelling longer distances than elsewhere in the country.

Effects of Higher Fuel Prices

Transit systems' energy costs were low in 1999, at five per cent of total costs. Electricity use made up an estimated 40 per cent of energy costs. Because of tax exemptions, transit systems paid lower fuel prices — for instance, between 35 and 40 cents per litre — than did the trucking or bus industries, where effective fuel prices averaged 49 cents a litre in 1999.

By the end of 2000, transit systems may have experienced fuel cost increases in the order of 29 per cent over the 1997 base average fuel price of 37.5 cents a litre. If the higher fuel costs were to be absorbed by users, in the absence of any offsetting factors, fares would need to go up by 2.4 per cent. Since operating subsidies are about as large as passenger revenues, the subsidies would have to increase by the same amount as fares. In provinces where electricity was used as an energy source for motive power,[12] the impact of increased fuel prices on total transit costs was limited to less than one per cent. In other provinces, the impact would be twice as much.

AIR TRANSPORT INDUSTRY

This section does not present in detail the performance of individual carriers. Instead, the analysis is mainly concerned with the overall performance of the industry. The definition of this industry used for this analysis is limited by data availability; for the purpose of this section, the industry is made up of most of Level I and II air carriers[13] operating in 1999, namely Air Canada, Canadian Airlines, Air Nova, Air Ontario, Ontario Express, Air BC, Inter-Canadien,[14] Canadian Regional, Air Transat, Canada 3000, Royal Air and WestJet. The last four carriers are now included in the productivity and cost analyses. This group of air carriers accounts for 85 per cent of the industry's total revenues, generating total revenues of $11.5 billion in 1999, a 10 per cent increase over 1998 revenues.

12 Québec, Ontario, Alberta and British Columbia

13 More detail is available on Transport Canada's Web site (http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html).

14 In 2000, a number of these carriers had been consolidated, (e.g., Air Canada and Canadian Airlines; all Air Canada's affiliates) Inter-Canadien was no longer operating.

Price and Output Indicators

In 1999, the air transport industry benefited from an increase in prices and in demand. Industry prices increased by 5.3 per cent, and passenger and freight services both grew by 4.4 per cent, with most growth occurring in the second half of the year. Most of the factors that affected industry performance in 1998 were no longer present. The last phase of air navigation fees was completed in 1999, and these fees, which replaced the Air Transportation Tax (ATT), affected the price performance of Canadian airlines. This was significant for regional and discount carriers in short-haul markets. From 1997 to 1999, carriers' prices in these markets rose by 9.5 per cent. Without the navigation fees, carriers' prices would have increased by one per cent. Consumers in the end faced marginally higher air transportation costs, since the navigation fees replaced the ATT.

From 1994 to 1999, the output of the air transport industry increased by 54 per cent, but average industry prices increased by only 5.8 per cent. The prices of domestic passenger services rose by 2.4 per cent; were it not for the air navigation service fees, domestic passenger prices in 1999 would have been about the same as in 1994, further stimulating domestic demand, which actually increased by 35 per cent at any rate. The transborder markets are the only segment that experienced growth in both price and output: Prices increased by 39 per cent and output increased by 73 per cent. The 1999 fares in other international markets remained lower than those paid in 1994, but they have been growing in recent years, by 2.9 per cent in 1998 and 2.4 per cent in 1999. While demand for foreign travel to markets outside the United States exhibited an average increase of almost 10 per cent a year, growth in overall demand slowed to four per cent in recent years.

Airline revenues from freight activity increased by 34 per cent between 1994 and 1999, thanks to a 31 per cent increase in the volume of air freight. Air cargo rates grew only by two per cent.

Between 1994 and 1999, air carriers' prices rose at rates exceeding by 0.2 per cent the economy's rate of inflation. The cost to airline users did not go up, since the increase in carrier prices was offset by the elimination of the air transportation taxes.

During the first six months of 2000, output grew by 3.5 per cent, and prices increased by 4.9 per cent.

Cost Structure

The split between variable and capital costs changed little in the last year; variable costs stood at 82 per cent of total costs, and capital costs comprised 18 per cent of total costs. However, during the last six years, there were some major shifts within the variable cost group. Labour costs represented approximately 22 per cent of total costs in 1999, about the same as in 1997, but were 2.2 percentage points lower than 1994's labour costs. Fuel cost share was down to 12 per cent of total costs in the aviation sector in 1999, from a 15 per cent share in 1997.

Other variable costs represented a cost share of 48 per cent in 1999, significantly higher than the 43 per cent share of 1994. Increases in navigation and landing fees were largely responsible for this change: Those fees doubled from their mid-1990s level of three per cent of total costs.

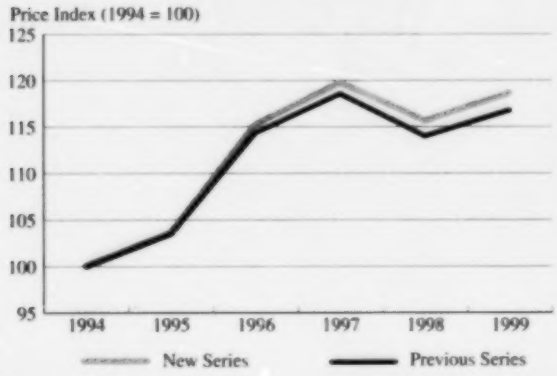
The capital cost share accounted for some 18 per cent of total costs, having dropped back to 1996 levels from the 20 per cent share it held in the mid 90s. Airline capital costs declined because airlines divested themselves of and disposed of assets. The value of fixed assets owned by Canadian airlines fell from $4.4 billion to $3.2 billion from 1994 to 1999, as airlines moved increasingly to leasing. Leasing costs made up 54 per cent of total capital costs in 1999; in 1994, they accounted for 40 per cent.

Productivity and Unit Cost Indicators

Between 1994 and 1999, total factor productivity of the air transport industry as a whole increased by 17 per cent, with major gains in 1996 and 1997. Productivity dropped 3.8 per cent in 1998, but regained 2.4 per cent in 1999, to return to near-1997 levels. As Figure 14-2 shows, the broader base of analysis alters the trends only marginally.

Since 1994, the air industry's unit costs have increased annually by 0.4 per cent. In 1998, lower productivity and major increases in factor prices contributed to unit costs rising by 7.7 per cent. In dollar terms, this added almost $1 billion to the cost base of the airlines. In 1999, unit costs increases were limited to 1.6 per cent. Factor prices, most notably labour and capital, continued to rise, but the impact of the 4.1 per cent increment in factor prices was mitigated by productivity gains. Total costs for industry dropped by $18 million in 1999. Some carriers experienced significant cost increases in 1999. Thanks to major cost reductions in 1996 and 1997, industry costs, at $72 million, were lower in 1999 than in 1994. In comparison, from 1991 to 1994, the air transport industry realized cost reductions of about $750 million.

FIGURE 14-2: PRODUCTIVITY TRENDS IN THE AIR TRANSPORT INDUSTRY, 1994 – 1999



Previous Series: Air Canada, Canadian Airlines, Air Nova, Air Ontario, Ontario Express, Air BC, Inter-Canadien, Canadian Regional.
New Series: Previous Series plus Air Transat, Canada 3000, Royal Air and WestJet

Source: Transport Canada

Financial Performance

In 1999, the operating income of the Canadian carriers rose by $157 million. While most years, the average operating ratios of the two main airlines — Air Canada and Canadian Airlines — stayed above 98 per cent, the burden of past losses — $2 billion since 1991 — became unbearable and led to a major restructuring of the industry.

In 2000, Air Canada's profitability was adversely affected by non-recurring charges associated with the restructuring process and by higher fuel costs. The carrier reported an operating loss of $101 million for 2000, which was largely caused by non-recurring items totalling $282 million, including one-time labour expenses of $178 million related to a new collective agreement with pilots, $32 million to plan for the pilot strike threat, and $72 million to integrate customer services.[15] Excluding the non-recurring expenses, Air Canada had an operating income of $181 million, as shown in Table 14-9, with an operating ratio of 98.3 per cent.

TABLE 14-9: SUMMARY OF FINANCIAL RESULTS FOR THE AIR TRANSPORT INDUSTRY

(Millions of dollars)

	1994	1997	1998	1999	2000
Air Canada and Canadian Airlines					
Revenue	6,690	8,648	9,103	9,706	10,740
Expenses[1]	6,678	8,182	8,981	9,471	10,559
Operating Income	11	465	122	235	181
Operating Ratio (per cent)	99.8	94.6	98.7	97.5	98.3
Larger Independent Carriers					
Operating Income	30	61	36	80	N/A
Operating Ratio (per cent)	95.2	94.3	98.2	95.9	N/A

1 Excluding $282 million non-recurring expenses in 2000

Source: Air Canada and Canadian Airlines figures for 1994 – 1998 have been taken from Air Canada's and Canadian Airlines International's annual reports. Figures for 1999 – 2000 were reported by Air Canada. Figures for the larger independent carriers were provided by Transport Canada, based on Statistics Canada files

The independent carriers — Air Transat, Canada 3000, Royal Air and WestJet — showed mixed financial performance, with some being profitable and some not so successful. As a group, they had an average operating ratio of 96 per cent in 1999, down from 98 per cent in 1998.

The consolidation of the air industry is continuing. Recently, Canada 3000 announced the purchase of Royal Air.

Effects of Higher Fuel Prices

In 1997, the airline industry paid, on average, 28.4 cents a litre for jet fuel. This analysis assumed that fuel prices rose 11 cents to reach 39.4 cents by 2000, a 39 per cent increase and 55 per cent from lower 1999 prices reported by Air Canada in its 2000 fourth quarter report. This would have led to an increase in total costs of 5.9 per cent since 1997. If users absorbed all of the higher fuel costs, in the absence of any offsetting factors, transport prices would need to rise by 6.1 per cent. The estimates of price increases in the first half of the year seem to indicate that the industry has either not passed along the fuel cost increases or have offset the increase through efficiency gains.

15 Air Canada official press release, February 2001

TABLE 14-10: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1999

	Price changes (Annual per cent increase)				*Output changes (Annual per cent increase)*			
	1991–1994	*1997/98*	*1998/99*	*1994–1999*	*1991–1994*	*1997/98*	*1998/99*	*1994–1999*
CN and CPR total	(1.4)	(0.3)	(2.9)	(0.8)	3.7	(4.8)	4.1	1.0
VIA Rail								
Corridor	5.3	6.7	(0.9)	2.5	0.1	(3.7)	9.7	0.7
Long haul	6.4	8.6	(6.9)	4.3	2.7	(0.4)	18.3	3.1
Remote-regional	(2.0)	14.2	(8.3)	3.5	5.5	(7.6)	13.6	(0.2)
Total	5.0	7.2	(2.8)	3.0	1.0	(1.6)	12.9	1.7
Trucking								
Intraprovincial	(0.1)	(1.5)	(2.3)	(0.6)	7.4	6.9	1.9	6.1
Interprovincial	1.2	(2.8)	1.1	(1.1)	5.5	4.0	2.4	5.5
Transborder	1.6	2.0	1.9	0.8	17.4	4.5	18.8	12.3
Total trucking	0.7	(0.6)	(0.1)	(0.3)	9.9	4.4	9.5	8.3
Intercity Bus Industry								
Regular bus services	0.5	0.6	3.3	1.4	(3.5)	(0.6)	(6.0)	(4.3)
Charter bus services	(4.6)	(4.3)	5.5	(1.6)	7.7	28.3	(12.6)	6.6
Total bus	(0.9)	(0.9)	1.8	(0.2)	0.1	11.6	(4.1)	2.2
Transit Industry total	4.1	1.2	1.0	(2.1)	(1.7)	0.6	(0.1)	0.8
Air Transport Industry								
Domestic passenger	2.2	4.3	5.7	0.5	(1.0)	5.8	2.3	6.2
International passenger	0.3	3.5	6.2	1.8	3.7	3.4	5.9	10.4
Air freight	(3.8)	5.5	(0.4)	0.4	0.9	(2.4)	7.9	5.6
Total air industry	0.9	3.7	5.3	1.1	1.2	7.8	4.4	9.0
Selected Transport Industries [1]								
Freight	(0.2)	(0.4)	(1.1)	(0.5)	6.9	2.3	7.6	6.2
Passenger	1.3	3.8	6.0	1.2	1.2	4.5	4.3	8.4
Total	0.1	0.9	1.1	0.1	5.5	3.4	6.7	6.8
Total Transport [2]								
Business carriers	0.1	0.8	1.1	0.1	5.4	3.6	6.5	6.7
Public carriers	4.2	1.8	0.6	3.2	(1.5)	0.4	6.1	0.9
Total	0.4	0.9	1.1	0.3	4.9	3.4	6.5	6.3

1 CN and CPR Rail, and the trucking and airline industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-11: PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1994 AND 1998

	CN and CPR	*VIA Rail*	*Trucking*	*Intercity bus*	*Transit*	*Airlines*	*Larger industries* [1]	*Total* [2]
Price Reduction ($ million)	531	(18)	750	32	(186)	(304)	977	805
Price Reduction (Per cent)	8.2	(8.2)	4.7	5.0	(10.0)	(2.6)	2.9	2.2
Cost Saving ($ million)	1,101	145	726	76	(58)	72	1,899	2,063
Cost Saving (Per cent)	17.0	31.3	4.6	12.7	(1.4)	0.6	5.3	5.6

1 CN and CPR Rail, and the trucking and airline industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-12: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991, 1994 AND 1998 – 1999

(Per cent of total costs)

		CN and CPR	*VIA Rail*	*Trucking*	*Intercity Bus*	*Transit*	*Airlines*	*Larger Industries*[1]	*Total*[2]
1991	Variable	70.1	80.4	86.4	81.5	75.6	80.5	79.4	79.0
	Labour	40.8	40.1	48.1	39.9	49.5	26.0	39.9	39.9
	Fuel	8.4	3.3	11.8	8.0	3.8	14.2	10.3	10.3
	Other	20.9	37.0	26.5	33.6	22.3	40.3	29.2	28.8
	Capital	29.9	19.6	13.6	18.5	24.4	19.5	20.6	21.0
1994	Variable	72.8	80.5	87.7	82.6	73.7	80.0	81.3	80.3
	Labour	41.3	40.4	47.2	41.2	54.2	23.3	40.6	40.6
	Fuel	8.1	2.9	12.6	8.0	5.0	13.7	10.6	10.6
	Other	23.4	37.2	27.9	33.4	14.5	42.9	30.1	19.7
	Capital	27.2	19.5	12.3	17.4	26.3	20.0	18.7	10.3
1998	Variable	71.2	83.3	86.8	79.3	70.2	82.2	82.0	80.7
	Labour	37.3	40.1	45.6	41.7	51.1	21.3	37.4	37.4
	Fuel	7.9	3.8	13.0	9.1	4.9	11.9	10.7	10.7
	Other	26.0	39.4	28.1	28.5	14.2	48.9	33.9	19.3
	Capital	28.8	16.7	13.2	20.7	29.8	17.8	17.6	7.3
1999	Variable	70.3	83.5	86.5	79.2	69.7	82.4	82.0	80.7
	Labour	38.0	40.6	45.5	41.7	50.8	21.9	37.6	37.6
	Fuel	7.2	3.8	12.9	8.4	5.0	12.0	10.7	10.7
	Other	25.1	39.2	28.1	29.0	13.9	48.5	33.6	19.3
	Capital	29.7	16.5	13.5	20.8	30.3	17.6	18.0	7.6

1 CN and CPR Rail, and the trucking and airline industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-13: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1994 TO 1999

		Productivity (Annual per cent increase)				*Unit Costs (Annual per cent increase)*			
		1991–1994	*1997/98*	*1998/99*	*1994–1999*	*1991–1994*	*1997/98*	*1998/99*	*1994–1999*
CN and CPR Rail	Variable	4.9	0.8	8.0	5.0	(1.9)	(3.8)	(5.1)	(3.3)
	Capital	2.4	(4.2)	3.3	1.4	(6.5)	0.7	(1.3)	(0.6)
	Total	4.2	(0.6)	6.6	4.0	(3.3)	(2.5)	(4.0)	(2.5)
VIA Rail	Variable	2.3	(1.2)	11.7	6.0	(2.6)	1.7	(12.0)	(4.2)
	Capital	5.8	3.3	(18.1)	1.8	(2.8)	(2.3)	(6.9)	(6.7)
	Total	3.0	(0.5)	6.1	5.3	(2.6)	1.0	(10.8)	(4.6)
Trucking Industry	Variable	1.2	3.5	0.8	2.5	0.2	(1.3)	0.3	(0.5)
	Capital	4.2	(2.5)	(2.0)	(0.9)	(3.5)	2.6	2.5	1.6
	Total	1.6	2.7	0.4	2.1	(0.3)	(0.8)	0.6	(0.2)
Intercity Bus Industry	Variable	3.1	6.6	(0.3)	4.8	(2.0)	(4.3)	1.7	(2.5)
	Capital	5.2	(0.6)	(0.2)	(0.2)	(4.6)	3.2	2.2	2.0
	Total	3.5	5.4	(0.3)	3.8	(2.5)	(2.9)	1.8	(1.6)
Transit	Variable	2.3	1.2	1.6	0.8	1.7	(0.8)	(1.9)	0.2
	Capital	(1.4)	(3.9)	(2.6)	(3.6)	5.2	3.8	0.7	4.2
	Total	1.4	(0.3)	0.4	(0.4)	2.5	0.5	(1.1)	1.3
Air Transport Industry	Variable	4.2	(6.2)	2.0	2.0	(2.8)	7.7	2.0	1.1
	Capital	5.2	7.0	4.1	8.3	(1.7)	7.8	(0.4)	(2.5)
	Total	4.4	(4.0)	2.4	3.1	(2.6)	7.7	1.6	0.4
Larger Transport Industries[1]	Variable	3.2	(0.3)	2.4	2.8	(1.4)	1.1	(0.1)	(0.5)
	Capital	3.7	(0.1)	1.7	2.8	(4.3)	3.6	0.3	(0.5)
	Total	3.3	(0.3)	2.3	2.8	(2.0)	1.5	(0.0)	(0.5)
Total Transport[2]	Business Carriers	3.3	(0.2)	2.2	2.8	(2.0)	1.5	0.0	(0.5)
	Public Carriers	1.6	(0.3)	0.9	0.2	1.8	0.6	(2.2)	0.6
	Total	3.0	(0.2)	2.1	2.5	(1.4)	1.3	(0.2)	(0.4)

1 CN and CPR Rail, and the trucking and airline industries.
2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-14: SIMULATED 2000 FUEL PRICE ON TOTAL COSTS, TRANSPORT PRICES AND SUBSIDIES

	Fuel Cost Share (per cent)		*Fuel Cost Change (per cent)*		*Total Cost Change (per cent)*	
	1997	*1999*	*1997*	*1999*	*1997*	*1999*
CN and CPR	9.1	7.9	32.7	51.5	3.0	3.7
Trucking	13.2	13.0	25.5	28.9	3.4	3.7
Air Transport Industry	15.2	11.9	38.9	55.0	5.9	6.6
Intercity Bus Industry	9.7	9.1	25.7	29.2	2.5	2.5
Commercial Carriers[1]	12.8	12.8	32.0	41.2	4.1	4.7
VIA Rail	3.8	3.8	38.3	44.6	1.6	1.7
Transit Industry	3.2[2]	3.1[2]	31.6	46.2	1.0	1.3
Public Carriers[3]	3.4	3.2	32.5	46.0	1.1	1.4
Total[4]	**11.6**	**10.5**	**32.0**	**41.3**	**3.7**	**4.3**

	Fuel Prices (cents/litre)		*Transport Price Change (per cent)*		*Subsidy Change (per cent)*	
	1997	*1999*	*1997*	*1999*	*1997*	*1999*
CN and CPR	32.0	28.1	3.5	4.1	N/A	N/A
Trucking	50.6	48.4	3.5	4.0	N/A	N/A
Airline Industry	28.4	24.3	6.1	7.1	N/A	N/A
Intercity Bus	50.3	48.0	2.5	2.4	N/A	N/A
Business	36.7	33.5	4.3	5.0	N/A	N/A
VIA Rail	32.5	29.8	4.2	3.8	3.9	4.3
Transit	37.5	34.2	2.4	3.0	2.7	3.5
Government	36.7	33.6	2.6	3.1	2.8	3.6
Total	**36.7**	**33.5**	**4.2**	**4.9**	**N/A**	**N/A**

1 CN and CPR, and the trucking, bus and airline industries.
2 Excludes the estimated cost of electricity used as motive power.
3 VIA Rail and Transit Systems.
4 Excludes the shipping industry.

Source: Transport Canada based on Statistics Canada and carriers' files